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VALIDITY OF CERTAIN MEASURES OF PERSONALITY ADJUSTMENT

DANIEL D. FEDER AND DONALD R. MALLETT

OF THE various factors which play important rôles in the adjustment patterns of college students, it is now possible to measure with high reliability and validity such items as intelligence, specialized aptitudes, and educational background. Other items such as health, family background, and social status have been evaluated by clinical means. The importance of general personality adjustment has long been recognized, and many efforts have been made to provide personnel workers with convenient instruments of measurement in this area. The present study is an attempt to determine the validity of three such tests for use at the college level.

These scales are literally "paper and pencil" psychiatric interviews, the principal purpose of which is to obtain a quantitative picture of the personality adjustment of each student on a written form and in a short time. The necessity of a long personal interview with each student is eliminated, since such tests may be given to large groups of persons at one time. Results obtained through

the use of the Thurstone Personality Schedule, the Woodworth-House Mental Hygiene Inventory, and the Bell Adjustment Inventory were used in this study.

For the purpose of establishing some definite criteria by which to gauge the effects of personality maladjustment at the college level, a preliminary study was made of a group of twenty-one subjects who, in their freshman year in the College of Liberal Arts, had been committed to the Psychopathic Hospital for treatment. All of these students had been treated in the out-patient clinic of the hospital for either psychoneurotic or psychopathic personality disorders. (No subjects diagnosed as psychotic were included in this group since the mental deterioration which is part of the psychotic pattern must inevitably affect scholastic adjustment.) The results obtained from the study of this group indicate that at least five characteristics of the adjustment pattern differentiate the maladjusted from the well adjusted individual: (1) the maladjusted person more frequently deviates markedly from his predicted level of achievement than does the well adjusted person; (2) the maladjusted individual takes more time in adjusting to the college environment than does the well adjusted person; (3) the maladjusted individual tends to be older at the time of entrance into college than the well adjusted individual; (4) fewer of the maladjusted individuals show evidence of social participation in the college environment; (5) the maladjusted individual has been out of high school a longer period of time before entering college. These five criteria together with others suggested by a survey of the literature formed the basis of this research.

Data for the study were secured from the records of the freshmen who entered the College of Liberal Arts in the University of Iowa during the years 1931-34 inclusive. The 1931 and 1932 entrants took the Thurstone Personality Schedule; those in 1933 took the Woodworth-House Mental Hygiene Inventory; those in 1934 took the Bell Adjustment Inventory. Each of the scales was given as a part of the Freshman Qualifying Examinations, a battery of college aptitude tests composed of Iowa High School Content Examination, the Iowa Silent Reading Test, and the Mathe-

matics Aptitude and English Training tests of the Iowa Placement Examination Series.

The following data were gathered for each subject: (1) Size of high school from which the individual was graduated; (2) school years elapsing between graduation from high school and entrance to college; (3) age at the time of entrance to college; (4) sex; (5) percentile rank on the Freshman Qualifying Examinations; (6) grade point average achieved during the freshman year; (7) deviation of achievement from prediction; (8) type of residence during the first year (fraternity, sorority, dormitory, or private home); (9) disciplinary records; (10) scholastic delinquency records; (11) measures of adjustment to social groups; (12) health records from the Student Health Clinic.

The achievement records were limited to the first year's work in view of the fact that the major personality adjustments involved in leaving home circles to attend the University presumably take place during the freshman year.[1, 2]

The three scales under investigation are representative of personality measurements in general. The Thurstone Personality Schedule[3] is composed of 223 questions of the "yes", "no", "?" type and yields a single critical score.

The Woodworth-House Mental Hygiene Inventory[4] is made up of 100 questions of which 30 are answered in terms of the individual's childhood (pre-adult) experiences, and 70 in terms of adult experiences. The answers are recorded by checking "no", "moderate yes", and "extreme yes" according to the degree of occurrence of each experience.

The Bell Adjustment Inventory[5] is made up of 140 questions

[1] Doermann, Henry J.: *The orientation of the college freshman.* Baltimore; Williams, 1926, pp. 1-162.

[2] Remmers, H. H.: "A diagnostic and remedial study of potentially and actual failing students at Purdue University." Purdue University Studies in Higher Education, IX, 1928, pp. 1-164.

[3] Thurstone, L. L. and Thurstone, Thelma: "A neurotic inventory." *J. Soc. Psychol.,* Vol. 1, February, 1930, pp. 3-30.

[4] House, Daniel: "A mental hygiene inventory." *Archives of Psychol.* XIV, No. 88.

[5] Bell, Hugh M.: "The theory and practice of student counseling." Stanford University Press, 1935, pp. 138.

of the "yes", "no", "?" type. The inventory yields four part scores which purport to measure the following four aspects of personality adjustment: (1) Home Adjustment; (2) Health Adjustment; (3) Social Adjustment; and (4) Emotional Adjustment. Norms are also given for the total score.

The treatment of the data included a study of the differences in (a) ability, (b) achievement, (c) deviation of achievement from prediction, (d) health adjustment, (e) prediction of disciplinary problems, (f) influence of elapsed interval between high school graduation and entrance to college, (g) relation to various phases of social adjustment.

In view of the existent clinical evidence it was assumed that those individuals measured as very well adjusted on a given scale should contrast sharply in some phases of the adjustment pattern with those at the other extreme, if the measuring instrument being used was valid.

By means of the multiple correlation technique the value of the personality scales in predicting individual achievement was shown to be negligible. Prediction coefficients remain unchanged with the addition of personality adjustment scores to the multiple regression equations. Actually, however, such a result would be expected when one remembers the nature and intended use of the scales.

On the basis of the preliminary study reported above, if a student is suffering from a marked personality deviation it might be expected to result in a concomitant divergence in the achievement of the individual from his predicted level. This deviation might represent either one of two major types found among college students: (1) The compensatory reaction of the "grind" who seeks good grades because of certain recognized personal deficiencies or other unusual motivation; (2) or the case of interference with intellectual efficiency concomitant with personality maladjustment.

The data contained in Table I are based upon those individuals at the extreme of maladjustment and those at the extreme of good adjustment as measured by the Thurstone Personality Schedule. The matched group was paired in terms of sex and ability with

TABLE I

MEASURES OF ABILITY, ACHIEVEMENT, AND PERSONALITY ADJUSTMENT OF THE STUDENTS WHO TOOK THE THURSTONE PERSONALITY SCHEDULE*

	MALADJUSTED		MATCHED		WELL ADJUSTED	
	A.M.	S.D.	A.M.	S.D.	A.M.	S.D.
1. Composite Qualifying Examination	51.90	27.80	52.10	27.70	51.10	26.20
2. Personality Score	76.10	12.50	30.30	13.70	12.80	4.90
3. Year Grade Point Average	2.07	.69	2.12	.63	2.03	.61
4. Absolute Deviation of Achievement from Prediction	.40	.31	.49	.34	.43	.31

* Complete data upon which these summary tables are based may be found in A Study of the Validity of Certain Measures of Personality Measurement at the College Level, D. R. Mallett, Ph.D. dissertation, University of Iowa.

the maladjusted group, but had normal personality scores. It was expected that this method of selection would reveal characteristic differences between the maladjusted and well adjusted groups in prediction coefficients and in achievement. However, as the data reveal, no consistent or meaningful differences in ability or achievement were found. Furthermore, analysis of the prediction coefficients revealed no unusual deviations for the maladjusted students. In fact, more detailed analysis revealed a tendency for the maladjusted group to deviate less from their predicted level of achievement than the other groups.

No evidence was found which might indicate that the factors measured by the Schedule had any relationship to the amount of time taken for adjustment to the college environment.

Empirical evidence suggests that the person who joins a fraternity or sorority normally enjoys better social rapport than the person who lives in a room in a private home or in a dormitory. Further, the individual who chooses a dormitory in preference to a private home has more opportunity for social adjustment. In terms of the scores on the Schedule, no reliable differences in adjustment were found among the various residence groups.

From the clinical viewpoint, the ability to speak or read orally in a social situation is a basic criterion of social adjustment. Measures of this ability were secured upon an objective scale devised

by Professor Harry G. Barnes[6] of the Department of Speech of the University of Iowa. Neither the well adjusted nor maladjusted students revealed any special tendencies on this scale. Group comparisons yielded neither meaningful nor statistically significant differences.

TABLE II

HEALTH RECORDS OF THE STUDENTS WHO TOOK THE THURSTONE PERSONALITY SCHEDULE

REPORTED	MALADJUSTED	MATCHED	WELL ADJUSTED
Negatively	47%	54%	52%
Positively	53%	46%	48%
*Eye trouble	32%	18%	21%
*Nervous disorders	10%	5%	6%
*Organic disorders	29%	23%	23%

* The three starred items together will either equal or exceed the percentage of positively reported cases due to overlapping of disorders within the three groups.

Emme[7] points out that the physical well-being of the individual bears a marked relationship to his personality adjustment. Feelings of inferiority or superiority may be based upon physiological factors. There is a suggestion from the data in Table II that the health reports are related to personality adjustment, but the differences for this scale are not clear enough to warrant broad generalizations.

TABLE III

MEASURES OF ABILITY, ACHIEVEMENT, AND PERSONALITY ADJUSTMENT OF THE STUDENTS WHO TOOK THE WOODWORTH-HOUSE MENTAL HYGIENE INVENTORY

	MALADJUSTED		MATCHED		WELL ADJUSTED	
	A.M.	S.D.	A.M.	S.D.	A.M.	S.D.
1. Composite Percentile	56.52	26.23	56.46	26.30	47.11	29.31
2. Personality Score	12.72	5.50	1.36	1.59	.00	.00
3. Year Grade Point Average	2.13	.79	2.15	.62	1.97	.70
4. Absolute Deviation of Achievement from Prediction	.51	.40	.35	.36	.37	.31

[6] Barnes, H. G.: "A diagnosis of the speech needs and abilities of students in a required course in speech training at the State University of Iowa." State University of Iowa, Unpublished Doctor's Dissertation, 1932, pp. 1-214.

[7] Emme, E. E.: *The adjustment problems of college freshmen.* Nashville: Cokesbury Press, 1933, pp. 125.

The means and standard deviations of the measures of ability and achievement for the groups which took the Woodworth-House Mental Hygiene Inventory are presented in Table III. None of the differences found between the groups is statistically significant. However, it is interesting to note that the mean absolute deviation of achievement for the maladjusted group, both sexes, is larger than that of the matched or well adjusted groups. A further analysis of this factor shows that those individuals measured as maladjusted on the Inventory deviated more, both positively and negatively, than the students of the other groups, suggesting that this scale may have validity in terms of the deviation criterion previously cited.

That the factors measured by the Inventory bear some relationship to prediction is also evidenced by the prediction coefficient of $.56 \pm .05$ for the maladjusted group as compared with $.72 \pm .03$ for the well adjusted group, and $.71 \pm .04$ for the matched group. Although these differences are not statistically significant, (due to the small numbers of cases involved), they actually have psychological significance in terms of efficiency of prediction.

No significant relationship to sex, age, years elapsing between graduation from high school and entrance to college, or size of high school from which the individual was graduated, is shown. In terms of residential adjustment and public speaking situations, no meaningful differences in personality adjustments were found.

A marked difference between the maladjusted and well adjusted groups is shown in the reports of the health records, Table IV.

TABLE IV

HEALTH RECORDS OF THE STUDENTS WHO TOOK THE WOODWORTH-HOUSE MENTAL HYGIENE INVENTORY

Reported	Maladjusted	Matched	Well Adjusted
Negatively	48%	61%	63%
Positively	52%	38%	37%
*Eye trouble	41%	22%	25%
*Nervous Disorders	20%	4%	3%
*Organic Disorders	29%	10%	11%

* The three starred items together will either equal or exceed the percentage of positively reported cases due to overlapping of disorders within the three groups.

These figures indicate that the factors measured by the Inventory bear a definite relationship to the health adjustment of the individual.

TABLE V

MEASURES OF ABILITY, ACHIEVEMENT, AND PERSONALITY ADJUSTMENT OF THE STUDENTS WHO TOOK THE BELL ADJUSTMENT INVENTORY

		Home		Health		Social		Emotional	
		A.M.	S.D.	A.M.	S.D.	A.M.	S.D.	A.M.	S.D.
Variables									
1. Composite Qualifying Examination	I.	59.5	27.1	55.2	27.3	45.8	27.6	48.0	29.3
	II.	53.4	28.5	51.5	28.0	53.0	27.1	57.4	33.9
2. Total Score on Inventory	I.	58.9	13.5	61.8	17.6	61.8	12.5	62.3	12.7
	II.	23.5	11.3	18.5	10.0	21.1	12.0	13.5	13.2
3. Year Grade Point Average	I.	2.22	.61	2.12	.65	2.05	.53	2.13	.65
	II.	2.10	.71	2.01	.65	1.94	.73	2.11	.70
4. Absolute Deviation of Achievement from Prediction	I.	.40	.29	.47	.40	.47	.30	.41	.28
	II.	.40	.30	.41	.35	.48	.51	.40	.24

Groups: I. Maladjusted, II. Well Adjusted

In Table V the means and standard deviations of measures of ability and achievement are presented for those students who took the Bell Adjustment Inventory. The differences between the maladjusted and well adjusted groups in ability, achievement, and relationship of the two, are neither marked nor reliable. Further analysis of the data was made in terms of those in each group whose achievement deviated above prediction and those whose achievement deviated below prediction. Here again no meaningful differences were found. Prediction coefficients in each comparison were very much alike.

No relationship was found between any parts of the scale and educational background. The possible significance of age in the process of adjustment to college is suggested by the mean age of 19.4 for those scoring in the maladjusted range as against 18.8 for those scoring in the well adjusted range. More members of the well adjusted than of the maladjusted groups lived in fraternity and sorority houses, indicating some differentiation by the inven-

tory in terms of this aspect of personality adjustment. Furthermore, maladjustment on the social scale shows positive association with maladjustment in speech situations.

In contrast with the merely suggestive findings on the other inventories the health scoring of the Bell Adjustment Inventory makes marked discrimination between the maladjusted and well adjusted groups. Sixty-two per cent of the maladjusted group were reported positively by the Student Health Service as against twenty-five per cent of the well adjusted group positively reported.

In the light of the previously cited psychological and psychiatric evidence it appears that a student's personality breakdown is almost invariably accompanied by marked deviations of the individual's level of achievement from what was predicted for him in terms of the scholastic aptitude examinations. This deviation may be positive, above expectancy, or negative, below expectancy. A further phase of the present study was an attempt to test the validity of such extreme deviation as a criterion in one measurement or prediction of personality maladjustment. A deviation of two times the Probable Error of Estimate ($2\ PE_{est}$) or greater was considered an extreme deviation. This would make the minimum deviation about .8 of a grade point.

All of those freshman students who, in the years included in the study, deviated over $2PE_{est}$ were considered. Their ability, achievement, personality score on one of the scales discussed above, educational background, social adjustment, and health adjustment were analyzed, and the interrelationships studied. The results of these considerations indicate: (1) That there is no unusual relationship between ability and measures of personality adjustment which would designate this group as maladjusted; (2) the low correlations found between absolute deviation of achievement and personality score indicate that the deviation criterion is not a valid measure of personality adjustment as measured by the three inventories mentioned above; (3) the time taken for adjustment to the college environment is not a differentiating factor in this group; (4) in terms of educational background, age, sex, type of residence, or years out of high school the extreme deviation

group could not be differentiated from the total group; (5) in terms of mental and physical health adjustments, the students who showed extreme deviations in achievement could not be distinguished from those who achieved approximately or exactly at the level predicted for them.

SUMMARY AND CONCLUSIONS

In the light of evidence secured from the study of a group of college students with marked personality maladjustments, a series of criteria for the validity of the paper-and-pencil type of personality adjustment scales was established. Students at the extremes of good and bad adjustment in terms of best scores were compared in terms of these criteria as a test of the validity of the Thurstone Personality Inventory, the Woodworth-House Mental Hygiene Inventory, and the Bell Adjustment Inventory. The findings of this study may be summarized by the following generalizations:

1. The factors of personality measured by the Thurstone Personality Schedule and the Bell Adjustment Inventory are of no value in helping to predict scholastic adjustment and show no relationship to measures of ability, achievement or deviation of achievement from prediction.

2. There is some indication that the factors measured by the Woodworth-House Mental Hygiene Inventory are of value in predicting scholastic adjustment, when combined with other measures. Also, some relationship is indicated between these factors and measures of ability and achievement.

3. None of the scales studied have any relationship to educational background or personal factors such as age and sex. There were no significant sex differences in personality adjustment scores.

4. All of the scales seem to have validity in predicting health adjustment; the health scale on the Bell Adjustment Inventory and the Woodworth-House scale are the most valuable in this respect.

5. The social scale of the Bell Inventory discriminates to some extent between the socially maladjusted and well adjusted.

6. Those individuals who deviated over $2PE_{est}$ of achievement from prediction do not show any personality factors which differentiate them from those individuals achieving approximately at their level of ability.

In reviewing and integrating the results of this study, the balance seems rather strongly in favor of the Woodworth-House Mental Hygiene Inventory as the most useful and meaningful of the scales studied. The explanation of this may lie in the nature of the construction of the scale itself. The critical scores of the Woodworth-House Scale are taken from the adult "extreme yes" level. The subject, in taking the scale, is asked to mark this adult level only in terms of his experiences since the age of fourteen years. In this way the answers obtained not only express the individual's more recent reactions to more recent experiences, but also are freer from errors of memory and hearsay.

In contrast with this procedure is that which is common to the two other scales, namely, asking the individual if he has "ever" experienced the particular situation. It is a matter of common psychological observation that time and experience may seriously affect one's interpretations of earlier occurrences both favorably and unfavorably.

The study of those students whose achievement deviated over $2PE_{est}$ from prediction indicates that although marked deviation of achievement may, when coupled with other data, be significant of maladjustment, by itself it is too much subject to other influences to be a valid measure of personality adjustment.

From the foregoing findings it appears that paper-and-pencil personality questionnaires of the types herein studied have doubtful validity for the discovery and diagnosis of personality maladjustments. Further study may yet reveal improved methods of administration and interpretation which will increase the value of such measurements for the personnel worker, but at the present time they do not seem to be adequate substitutes for the personal or psychiatric interview.

RELATIONSHIP BETWEEN APTITUDE SCORES AND COLLEGE GRADES IN MATHEMATICS AND SCIENCE

M. RICHARD DICKTER

THE Scholastic Aptitude Test is an instrument furnished by the College Entrance Examination Board and is used by colleges and universities and as an aid in guidance. Considerable time and effort have been, and are being, spent on it. The question arose at the University of Pennsylvania concerning the degree of relationship between the scores made by students on the mathematical section of the Scholastic Aptitude Test at the time of their entrance to the University and their later academic success, as judged by their marks, in specific courses in first-year chemistry, first-year mathematics, and elementary physics. This study was undertaken in order to answer this question.

At the same time, the relationship between the scores made by the same students on the verbal section and their marks in the same courses was also determined, thus making it possible, in addition, to compare the relative merits of the two sections in mathematics and science. These relationships were investigated for the period 1930-36, the years during which both sections of the Scholastic Aptitude Test were given.

The situation is an individual one in each university, so that results obtained at one university are not necessarily directly comparable with similar results obtained at other universities. Yet, the findings at the University of Pennsylvania, in the sense that they indicate trends, will be of value to other interested groups outside the University.

Beginning in June, 1936, the College Entrance Examination Board dropped the mathematical section of the Scholastic Aptitude Test, which was taken by candidates for admission in September, 1936. This move by the Board did not affect any of the students considered in this study, since the study concerns itself

with students admitted to the University of Pennsylvania between September, 1930, and February, 1936, during which time the verbal and mathematical sections did not change and were taken by all applicants.

In place of the mathematical section, the Board is offering a new series of mathematical examinations, called Alpha, Beta, and Gamma.[1] Since the Board cannot compel the acceptance of its offerings, it remains for the individual university to decide upon their acceptance or rejection. Because of the situation caused by the dropping of the mathematical section and the offering of the new mathematical examinations, this study might also be used as an aid in deciding whether the new mathematical examinations should be given a trial. If this study should show that a mathematical section was useful in the Scholastic Aptitude Test for mathematics and science during the period 1930-36, then, presumably, a mathematical section would still be desirable for these fields after 1936. In that event, the results of this study could be used as evidence in support of the contention that the new mathematical examinations should be given a trial. It would, of course, remain for a future study, based upon this one, to determine whether the new mathematical examinations are more closely related to marks in mathematics and science than the original mathematical section.

THE COURSES STUDIED

A total of sixteen one-semester courses were included: four in chemistry, five in mathematics, and seven in physics. The chemistry and mathematics courses are generally studied in the freshman year and the physics courses in the sophomore year. A list of these courses follows:

In Chemistry

Chemistry 1: General Inorganic Chemistry.

Chemistry 101: General Inorganic Chemistry. A more detailed and intensive course for students intending to major in chemistry.

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[1] Report of the Commission on Examinations in Mathematics, *Mathematics Teacher*, XXVIII: 154-166, March, 1935.

Chemistry 3: Qualitative Analysis. Prerequisite: Chemistry 1.

Chemistry 104: Qualitative Analysis. Similar to Chemistry 3, but designed particularly for students intending to major in chemistry. Prerequisite: Chemistry 101.

In Mathematics

Mathematics 2: Plane Trigonometry. A course for beginners.

Mathematics 5: College Algebra.

Mathematics 6: Analytic Geometry.

Mathematics 7a: Elementary Analysis. An introduction to graphs, functions, and the differentiation and integration of simple algebraic functions. This course, together with one other course, is recommended for students who wish to take only six semester credits of mathematics in college.

Mathematics 7b: Elementary Analysis, continued. Continuation of Mathematics 7a, with introduction of trigonometric, logarithmic, and exponential functions. Elementary Analytic Geometry. Prerequisite: Mathematics 7a.

In Physics

Physics 1: Dynamics and Heat. The first half of a course in General Physics, introductory to other courses.

Physics 15a: Fundamentals of Physics: Dynamics and Heat. A minor course, which, together with Physics 15b, is intended for students electing only six semester credits in physics.

Physics 2: Sound, Light, Magnetism, and Electricity. The second half of the course in General Physics. Prerequisite: Physics 1.

Physics 15b: Fundamentals of Physics: Sound, Light, Magnetism, and Electricity. The complement of Physics 15a. Prerequisite: Physics 15a.

Physics 16: Elementary Dynamics. Prerequisites: Entrance Physics and Mathematics 6 (Analytic Geometry). Differential Calculus must be taken concurrently.

Physics 17: Properties of Matter, Heat, Sound, and Light. Taken concurrently with Physics 16. Prerequisite as for Physics 16.

Physics 18: Electricity and Magnetism. Prerequisites: Physics 16, Physics 17, Differential Calculus. Integral Calculus must be taken concurrently.

Because some of the courses were very similar in nature, the following pairs of courses were grouped together when making the calculations: Chemistry 1 and Chemistry 101, Chemistry 3 and Chemistry 104, Physics 1 and Physics 15a, and Physics 2 and Physics 15b. In this way, the number of separate courses was reduced from sixteen to twelve.

THE DATA

All the data for this investigation were obtained directly from the records of the individual students. Likewise, as far as the University of Pennsylvania is concerned, the data do not represent a sampling—all students who came within the scope of the investigation, that is, all students who had been admitted to the University of Pennsylvania during the years from September, 1930, to February, 1936, and who, up to June, 1936, had taken one or more of the sixteen courses studied, were included.

A total of 9251 cases, or marks, involving 2466 students, were obtained for investigation. This amounts to just less than four courses per student. Of the 9251 cases, slightly more than half were found in The College, about one-fifth in The Towne Scientific School, about one-eighth in The College of Liberal Arts for Women, and the remainder distributed among the other schools. The lowest number was in The Wharton School.

Chemistry 1, Mathematics 5, and Mathematics 7a contained the largest number of cases, each over one thousand. The analysis of the data showed that the student composition of the courses in each field was distributed about as follows:

1. A majority of the cases in Chemistry 1 were from The College, while most of the cases in Chemistry 3 were also from this college.

2. Chemistry 101 and Chemistry 104 were composed mainly of students from The Towne Scientific School.

3. Mathematics 2 was composed mainly of students from The College and The College of Liberal Arts for Women, with a considerable number from the two engineering schools.

4. More than half the students in Mathematics 5 were from the engineering schools, with most of the remainder from The College and The College of Liberal Arts for Women.

5. Most of the students in Mathematics 6 were from the engineering schools, with The College contributing about one-third of the remainder.

6. Practically all the students in Mathematics 7a and Mathematics 7b were from The College.

7. Most of the students in Physics 1, Physics 2, Physics 15a, and Physics 15b were also from The College.

8. Physics 16, Physics 17, and Physics 18 were comprised almost entirely of students from the engineering schools.

STATISTICAL TREATMENT

The relationship between test scores and course marks was determined by calculating the coefficients of correlation between the variables involved by means of the Pearson product-moment method. Coefficients of correlation were computed between the scores on the verbal and mathematical sections of students admitted to the University of Pennsylvania in each of the six academic years covered in this investigation, 1930-31 to 1935-36, inclusive, and the marks they later made in the courses under consideration. Twenty-four such correlations were made for each year —twelve between verbal test scores and marks in each of the courses and twelve between the mathematical test scores and marks in each of the same courses (verbal test scores and mathematical test scores refer, respectively, to the scores on the verbal and mathematical sections of the Scholastic Aptitude Test).

A similar set of twenty-four correlations was calculated for the entire period 1930-36, regardless of the year of admission. Separate correlations by years were made in addition to those for the entire period because it was felt that the latter, while valuable as a summary of what had happened, would not disclose any trends or variations that might have occurred during the years.

It will be noticed, likewise, that separate correlations were calculated between test scores and marks in each course, rather than between test scores and the average marks of all the courses in a field. The latter procedure would have yielded a confused picture of the relationships sought. A relationship determined for the average of several courses could not be applied to any one of the courses included in the average.

The number of cases that were available for each of the correlations by years and for the entire period may all be determined from

Table I. The number of cases for a course in a particular year may be obtained from the column for that year, and for the entire period 1930-36 from the last column on the right.

TABLE I

SUMMARY OF DISTRIBUTION OF CASES BY COURSES IN EACH ACADEMIC YEAR FOR THE ENTIRE PERIOD 1930–36

Course	1930–31	1931–32	1932–33	1933–34	1934–35	1935–36	Total
C. 1	220	256	255	279	246	211	1467
C. 3	90	118	130	142	131	19	630
C. 101	41	43	47	45	47	52	275
C. 104	37	34	41	41	37	41	231
M. 2	166	112	114	123	85	72	672
M. 5	168	188	181	189	168	197	1091
M. 6	120	125	111	131	108	136	731
M. 7A	87	178	234	218	220	146	1083
M. 7B	56	134	188	178	182	108	846
P. 1	97	123	127	123	62	3	535
P. 2	91	110	114	96	56	2	469
P. 15a	5	6	4	3	1	2	21
P. 15b	4	5	1	2	0	2	14
P. 16	84	96	88	92	63	0	423
P. 17	83	96	88	91	63	0	421
P. 18	63	74	78	76	51	0	342
Total	1412	1698	1801	1829	1520	991	9251

RESULTS AND CONCLUSIONS

The results obtained in this investigation are presented in Tables II-V, inclusive. Tables II and III contain the detailed results by years and Tables IV and V the corresponding summary results for the entire period 1930-36. Tables II and IV each show the coefficients of correlation between marks in each of the courses and scores on the verbal and mathematical sections (a clearer view of the data in Table IV will be found in Figure 1), Tables III and V the means of the course marks and the means of the scores on the verbal and mathematical sections (a comparison of the means of the scores on the verbal and mathematical sections in each course for the entire period 1930-36 is presented graphically in Figure 2).

Tables II-V, inclusive, contain certain abbreviations the meanings of which are necessary in order to understand the tables. The meanings of these abbreviations are given here.

C = chemistry
M = mathematics
P = physics
V.S. = verbal section
M.S. = mathematical section
r = coefficient of correlation
P.E. = probable error of the coefficient of correlation
X' = mean of the course marks
Y' = mean of the scores on the verbal section or the mathematical section of the Scholastic Aptitude Test.
σ_x = standard deviation of the course marks
σ_y = standard deviation of the scores on the verbal section or the mathematical section of the Scholastic Aptitude Test.

Analysis by Years in Chemistry.—See Table II.

1. The correlations on the mathematical section are higher than those on the verbal section in both Chemistry 1 (General Inorganic Chemistry) and Chemistry 3 (Qualitative Analysis) each year.

2. The correlations on the mathematical section for Chemistry 3 are low, with the exceptions of the 1930-31 and 1935-36 groups. The correlation rose above 0.4 only for the 1930-31 group.

3. The correlations are lower for Chemistry 3 than for Chemistry 1 in every case on both the verbal and the mathematical sections, with the exception of the mathematical section for the 1935-36 group.

Analysis by Years in Mathematics.—See Table II.

1. The correlations on the mathematical section are higher than those on the verbal section in every course each year, with the exception of the 1931-32 group in Mathematics 6 (Analytic Geometry), when the two sections were about equal.

2. The correlations between the mathematical section and the mathematics courses are consistently high. The correlations for Mathematics 5 (College Algebra) are the best, all above 0.5 and very close to 0.6. The highest correlation in the whole series, 0.636, is that between the mathematical section and Mathematics 5 for the

TABLE II

SUMMARY OF CORRELATIONS BETWEEN MARKS IN THE VARIOUS COURSES AND SCORES ON THE VERBAL AND MATHEMATICAL SECTIONS OF

TABLE II

SUMMARY OF CORRELATIONS BETWEEN MARKS IN THE VARIOUS COURSES AND SCORES ON THE VERBAL AND MATHEMATICAL SECTIONS OF THE SCHOLASTIC APTITUDE TEST FOR EACH ACADEMIC YEAR IN THE PERIOD 1930–36

Course	1930–31				1931–32				1932–33				1933–34				1934–35				1935–36			
	V.S.		M.S.		V.S.		M.S.		V.S.		M.S.		V.S.		M.S.		V.S.		M.S.		V.S.		M.S.	
	r	P.E.	r.	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.	r	P.E.
C. 1+C. 101	.302	.038	.526	.030	.236	.037	.422	.032	.221	.037	.381	.033	.362	.032	.458	.030	.314	.036	.443	.031	.107	.041	.366	.036
C. 3+C. 104	.224	.056	.415	.049	.193	.053	.309	.050	.181	.050	.283	.047	.256	.047	.329	.044	.158	.051	.267	.048	−.042	.087	.389	.074
M. 2	.075	.051	.484	.040	.134	.063	.483	.049	.296	.059	.491	.048	.203	.058	.498	.046	.219	.070	.570	.049	.061	.077	.556	.055
M. 5	.289	.048	.596	.033	.314	.044	.503	.037	.293	.046	.574	.034	.359	.043	.636	.029	.286	.048	.591	.034	.169	.047	.595	.031
M. 6	.364	.053	.499	.046	.349	.053	.332	.054	.160	.062	.447	.051	.262	.055	.408	.049	.305	.059	.512	.048	.132	.057	.472	.045
M. 7A	.098	.072	.456	.058	.189	.048	.479	.039	.220	.042	.459	.035	.196	.044	.487	.035	.202	.044	.495	.034	.085	.055	.478	.043
M. 7B	.208	.084	.440	.070	.289	.053	.364	.050	.202	.047	.335	.044	.206	.048	.459	.040	.218	.048	.424	.041	.056	.065	.343	.057
P. 1+P. 15a	.379	.058	.367	.058	.226	.056	.376	.051	.353	.052	.513	.043	.435	.049	.547	.042	.322	.075	.483	.064	*		*	
P. 2+P. 15b	.257	.065	.223	.066	.220	.060	.445	.050	.319	.057	.438	.051	.363	.060	.451	.054	.323	.081	.522	.066	*		*	
P. 16	.416	.061	.541	.052	.296	.063	.325	.062	.368	.062	.470	.056	.451	.056	.448	.056	.376	.073	.553	.058	*		*	
P. 17	.439	.060	.481	.056	.330	.062	.264	.064	.279	.065	.485	.055	.589	.047	.420	.058	.397	.071	.555	.058	*		*	
P. 18	.416	.071	.443	.068	.516	.057	.262	.073	.184	.073	.388	.064	.487	.059	.410	.064	.037	.095	.314	.085	*		*	

Coefficients not calculated because an insufficient number of cases were available for correlation.

TABLE III

SUMMARY OF THE MEANS OF THE COURSE MARKS AND THE MEANS OF THE SCORES ON THE VERBAL AND MATHEMATICAL SECTIONS OF THE SCHOLASTIC APTITUDE TEST FOR EACH ACADEMIC YEAR IN THE PERIOD 1930–36

Course	1930–31				1931–32				1932–33				1933–34				1934–35				1935–36			
	V.S.		M.S.		V.S.		M.S.		V.S.		M.S.		V.S.		M.S.		V.S.		M.S.		V.S.		M.S.	
	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′	X′	Y′
C. 1+C. 101	4.2	45.0	4.2	43.5	4.3	46.5	4.3	45.0	5.0	43.0	5.0	39.5	4.8	41.5	4.8	40.0	4.6	42.5	4.6	41.5	4.6	42.5	4.6	43.0
C. 3+C. 104	4.8	49.0	4.8	46.5	4.7	50.5	4.7	45.5	4.9	45.5	4.9	41.0	4.9	41.5	4.9	41.0	4.9	56.5	4.9	44.5	4.5	45.0	4.5	51.5
M. 2	4.5	44.0	4.5	36.5	4.2	47.5	4.2	31.0	5.0	43.5	5.0	33.5	4.8	44.5	4.8	32.5	5.2	48.5	5.2	34.5	5.0	40.0	5.0	30.5
M. 5	5.0	47.5	5.0	51.0	5.0	46.5	5.0	50.5	5.2	45.0	5.2	49.5	4.9	44.0	4.9	48.0	5.3	46.5	5.3	52.0	5.1	44.5	5.1	52.5
M. 6	5.5	48.5	5.5	55.5	5.4	46.5	5.4	57.5	5.4	45.0	5.4	58.0	5.0	46.5	5.0	55.0	5.3	48.0	5.3	60.5	5.2	46.5	5.2	57.5
M. 7A	4.7	45.5	4.7	39.0	4.3	50.5	4.3	39.5	4.7	44.0	4.7	34.5	4.9	40.5	4.9	35.0	5.1	43.0	5.1	33.5	4.8	40.0	4.8	35.0
M. 7B	4.8	44.5	4.8	40.5	4.6	50.0	4.6	42.5	4.8	44.5	4.8	36.0	5.1	40.5	5.1	37.0	5.5	43.5	5.5	35.5	5.3	39.5	5.3	38.0
P. 1+P. 15a	4.3	40.5	4.3	40.5	4.7	51.5	4.7	44.5	4.4	44.0	4.4	38.0	4.6	40.5	4.6	38.0	5.1	47.5	5.1	49.0				
P. 2+P. 15b	4.8	42.0	4.8	41.0	5.5	51.5	5.5	45.5	5.1	43.5	5.1	37.0	5.1	41.5	5.1	40.0	5.7	47.5	5.7	48.5				
P. 16	3.2	49.5	3.2	57.5	3.4	46.5	3.4	58.0	4.1	46.5	4.1	57.5	3.7	46.5	3.7	55.5	3.9	47.0	3.9	59.5				
P. 17	3.9	50.0	3.9	58.0	3.8	46.5	3.8	58.0	4.5	46.5	4.5	57.5	4.4	46.5	4.4	56.5	4.5	47.0	4.5	59.5				
P. 18	4.6	52.0	4.6	63.0	4.8	47.0	4.8	61.0	4.0	48.0	4.0	59.5	3.5	48.0	3.5	58.0	4.1	48.0	4.1	62.5				

1933-34 group. In only three instances do the correlations on the mathematical section fall below 0.4, in Mathematics 7B (Elementary Analysis, continued) for the 1931-32, 1932-33, and 1935-36 groups.

3. In every case, the correlations on the mathematical section are lower for Mathematics 7B than for Mathematics 7A (Elementary Analysis). This is, in general, not true of the verbal section. In only two of the six correlations between the verbal section and Mathematics 7B are they lower than the corresponding ones for Mathematics 7A.

Analysis by Years in Physics.—See Table II.

1. The verbal section makes its best showing, in comparison to the mathematical section, in physics.

2. For the 1930-31 group, the correlations on the verbal section are about equal to those on the mathematical section in Physics 1 (Dynamics and Heat) and Physics 2 (Sound, Light, Magnetism, and Electricity). The correlations, however, are low on both sections for the latter course. For the same group, in Physics 16 (Elementary Dynamics), Physics 17 (Properties of Matter, Heat, Sound, and Light), and Physics 18 (Electricity and Magnetism), the correlations on the verbal section are somewhat lower than those on the mathematical section, particularly in Physics 16, although in all three courses the correlations on the verbal section are very good, above 0.4.

3. For the groups following the 1930-31 group, the correlations on the mathematical section are higher than those on the verbal section in all the physics courses, with the exceptions of Physics 17 and Physics 18 for the 1931-32 group and Physics 16, Physics 17, and Physics 18 for the 1933-34 group. All told, the correlations on the mathematical section are higher than those on the verbal section in eighteen of the twenty-five physics correlations.

4. Of the twenty-five correlations between each section and the physics courses, the verbal section has two correlations above 0.5, six correlations between 0.4 and 0.5, ten correlations between 0.3 and 0.4, and seven correlations below 0.3. The mathematical sec-

tion, on the other hand, has six correlations above 0.5, eleven correlations between 0.4 and 0.5, five correlations between 0.3 and 0.4, and only three correlations below 0.3.

5. In most instances, the correlations for Physics 2 are lower than those for Physics 1, and lower for Physics 18 than for either Physics 16 or Physics 17, which are taken concurrently before Physics 18. Three of the five correlations between the mathematical section and Physics 2, and four of the five correlations between the verbal section and Physics 2, are lower than the corresponding ones for Physics 1. Similarly, all five of the correlations between the mathematical section and Physics 18, and two of the five correlations between the verbal section and Physics 18, are lower than the corresponding ones for either Physics 16 or Physics 17.

Analysis over the Entire Period 1930-36.—See Table IV or Figure 1.

1. The correlations on the mathematical section are higher than those on the verbal section for every course, when considering results over the entire six-year period.

To determine the reliability of the difference between the obtained coefficients of correlation for the verbal and mathematical sections, the ratio of the difference of the two coefficients to the probable error of their difference[2] was calculated for each course. In all the chemistry and mathematics courses, the ratios so found were greater than four, indicating that there is complete certainty (100 chances in 100) that the obtained difference represents a true difference greater than zero.[3] For Physics 1 (Dynamics and Heat), the chances are 99 in 100 that the obtained difference represents a true difference; for Physics 2 (Sound, Light, Magnetism, and Electricity), the chances are 98 in 100; for Physics 16 (Elementary Dynamics), the chances are 88 in 100; for Physics 17 (Properties of Matter, Heat, Sound, and Light), the chances are 67 in 100;

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[2] $\frac{D}{PE_{(diff.\ r_1 - r_2)}}$

[3] Henry E. Garrett, *Statistics in Psychology and Education*, p. 135, Table XV.

TABLE IV

SUMMARY OF CORRELATIONS BETWEEN MARKS IN THE VARIOUS COURSES AND SCORES ON THE VERBAL AND MATHEMATICAL SECTIONS OF THE SCHOLASTIC APTITUDE TEST FOR THE ENTIRE PERIOD 1930–36

Course	Verbal Section		Mathematical Section	
	r	P.E.	r	P.E.
C. 1+C. 101	.253	.015	.423	.013
C. 3+C. 104	.189	.022	.315	.021
M. 2	.151	.025	.491	.020
M. 5	.288	.019	.589	.013
M. 6	.273	.023	.436	.020
M. 7A	.170	.020	.457	.016
M. 7B	.192	.022	.374	.020
*P. 1+P. 15a	.364	.025	.477	.022
*P. 2+P. 15b	.309	.028	.422	.025
*P. 16	.374	.028	.441	.026
*P. 17	.403	.027	.428	.027
*P. 18	.346	.032	.369	.032

* The coefficients for the courses in physics were calculated for the five-year period 1930–35, since, being sophomore courses, no data were available for 1935–36.

and for Physics 18 (Electricity and Magnetism), the chances are 63 in 100.

2. The correlations on the mathematical section are all above

TABLE V

SUMMARY OF THE MEANS OF THE COURSE MARKS AND THE MEANS OF THE SCORES ON THE VERBAL AND MATHEMATICAL SECTIONS OF THE SCHOLASTIC APTITUDE TEST FOR THE ENTIRE PERIOD 1930–36

Course	Verbal Section		Mathematical Section	
	X′	Y′	X′	Y′
C. 1+C. 101	4.6	43.5	4.6	42.0
C. 3+C. 104	4.8	46.0	4.8	44.0
M. 2	4.7	45.0	4.7	33.5
M. 5	5.1	45.5	5.1	50.5
M. 6	5.3	46.5	5.3	57.5
M. 7A	4.7	43.5	4.7	35.5
M. 7B	5.0	43.5	5.0	37.5
*P. 1+P. 15a	4.6	44.5	4.6	41.5
*P. 2+P. 15b	5.2	45.0	5.2	41.5
*P. 16	3.7	47.0	3.7	57.5
*P. 17	4.2	47.0	4.2	58.0
*P. 18	4.2	48.5	4.2	60.5

* The means for the courses in physics were calculated for the five-year period 1930–35, since no data were available for 1935–36.

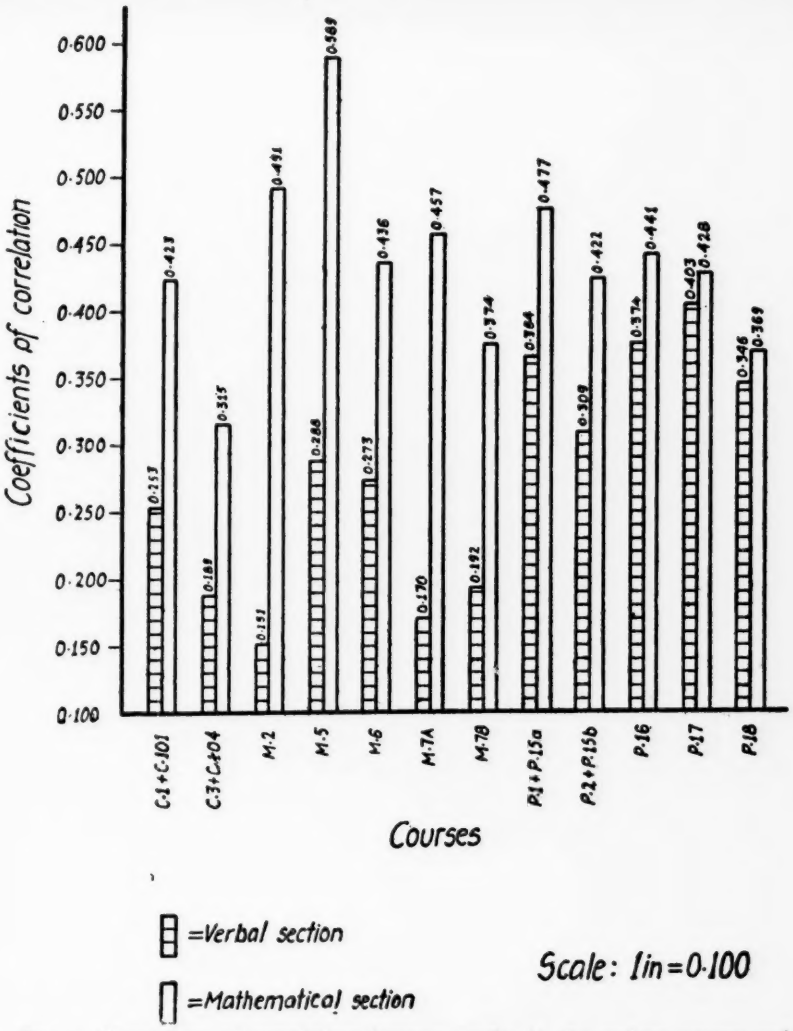

FIG. 1. Comparison of correlations between marks in the various courses and scores on the verbal and mathematical sections of the scholastic aptitude test for the entire period, 1930-36.

0.4, with the exceptions of Chemistry 3 (Qualitative Analysis), Mathematics 7B (Elementary Analysis, continued), and Physics 18.

3. The mathematical section is strongest in the case of Mathe-

matics 5 (College Algebra), being close to 0.6, and weakest in the case of Chemistry 3, being just above 0.3.

4. The relationship between the verbal section and achievement in chemistry and mathematics is low.

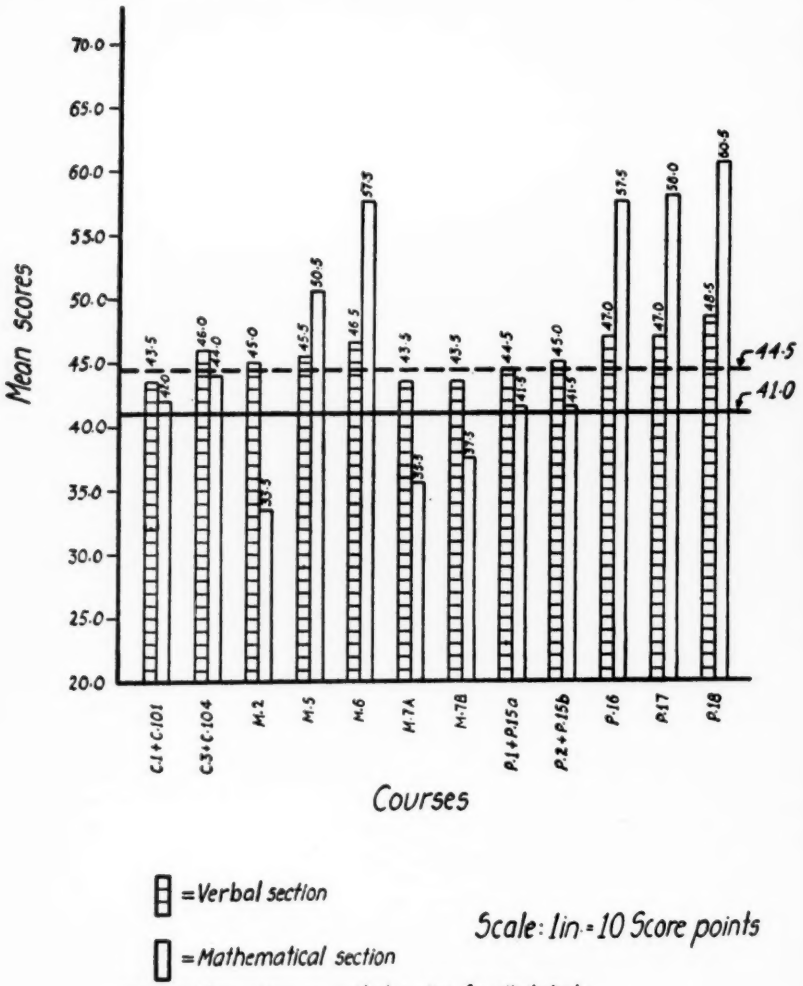

FIG. 2. Comparison of the means of the scores on the verbal and mathematical sections of the scholastic aptitude test in each course for the entire period, 1930-36.

5. The verbal section makes its best showing, in comparison to the mathematical section, in the physics courses. The coefficients of correlation for the verbal section approach very close to those of the mathematical section in Physics 17 and Physics 18. It seems advisable, therefore, in the case of physics, to use the verbal section in conjunction with a mathematical section.

6. The means of the scores on the verbal and mathematical sections contain some interesting points. If the means of the scores on the mathematical section for the various courses in any year (Table III), or for the entire six-year period (Table V or Figure 2), are examined, it is seen that they do not remain constant, but show rather marked variations.

Mathematics 2 (Plane Trigonometry), Mathematics 7A (Elementary Analysis), Mathematics 7B (Elementary Analysis, continued), the beginning courses in mathematics, are composed of students who have had very little previous mathematics, or who did not do well in their high-school mathematics, and of students who do not intend to take any additional mathematics. It would therefore be expected that such students would be lower in mathematical ability than those in more selected groups. For the students in these three courses, the means of the scores on the mathematical section are low, lower, in fact, than the average for all the students considered in this investigation.[4] In Mathematics 5 (College Algebra) and Mathematics 6 (Analytic Geometry), composed of students of higher mathematical ability, in the main of engineering students and for the remainder of a more selected group from the other schools taking additional mathematics, the scores on the mathematical section rise, and rise above the general average of 41.0.

A similar situation is found in chemistry and physics. The means of the scores on the mathematical section are at about the general

[4] The means of the scores on the mathematical section for all the students admitted in each academic year, regardless of courses studied, were found to be: 42.0 in 1930-31, 43.0 in 1931-32, 39.0 in 1932-33, 38.5 in 1933-34, 40.0 in 1934-35, 42.5 in 1935-36, and 41.0 for the entire six-year period. The corresponding means of the scores on the verbal section were: 45.0 in 1930-31, 48.0 in 1931-32, 44.0 in 1932-33, 43.0 in 1933-34, 44.5 in 1934-35, 42.5 in 1935-36, and 44.5 for the entire six-year period.

average in Chemistry 1 (General Inorganic Chemistry), Chemistry 3 (Qualitative Analysis), Physics 1 (Dynamics and Heat), and Physics 2 (Sound, Light, Magnetism, and Electricity), the beginning courses in chemistry and physics consisting of students unselected relative to the general college population. In the case of the three engineering physics courses, however, Physics 16 (Elementary Dynamics), Physics 17 (Properties of Matter, Heat, Sound, and Light), and Physics 18 (Electricity and Magnetism), composed of engineering students, a group highly selected in mathematical ability, the means of the scores on the mathematical section are consistently high.

A similar analysis of the means of the scores on the verbal section shows that these scores do not exhibit corresponding variations. Instead, they remain more or less constant from course to course, thus substantiating in yet another way the evidence demonstrated by the coefficients of correlation, that the mathematical section is a more sensitive instrument than the verbal section in detecting groups of varying mathematical ability.

7. There is a strong tendency for the correlations on both sections to be lower for the second semester of a course than for the first semester. This tendency is apparent when the correlations are compared for Chemistry 1 with Chemistry 3, Mathematics 7A with Mathematics 7B, Physics 1 with Physics 2, and Physics 16 and Physics 17, which are taken concurrently, with Physics 18. The only exception in Table IV, or Figure 1, is in the case of Mathematics 7A and Mathematics 7B for the verbal section. The exceptions to this trend in the correlations for the individual years are very few. The lower correlation in the second semester of a course is probably due to the greater homogeneity of the students in the second half. If the means of the scores of the students on the mathematical section in Table V, or Figure 2, are compared for the first and second semesters of a course, and similarly for the verbal section, it is seen that these means are higher for the second half of a course than for the first half, thus showing that in the second half the students represent a group higher in those abilities tested by the Scholastic Aptitude Test, due to the elimination of the students

who failed at the end of the first half.

8. Considering that we are dealing with a single instrument and that we are on the college level, where the student personnel is more homogeneous than on the secondary level, the fact that the correlations for the mathematical section are almost all above 0.4 indicates a considerable positive relation between the scores made by students on the mathematical section of the Scholastic Aptitude Test at the time of entering the University and their future academic success in the fields of chemistry, mathematics, and physics. It must also be remembered that the obtained coefficients of correlation are lower than they otherwise would be because not all the candidates who apply for admission and take the examination are admitted, the poorer ones being rejected.[5] The more homogeneous the group, the greater is the restriction in the range of ability, and this restriction tends to lower the coefficients of correlation.[6]

9. The results indicate the continued desirability for a mathematical section, or its equivalent, in the Scholastic Aptitude Test for the guidance and teaching of students in courses in the fields of chemistry, mathematics, and physics. Since the original mathematical section is no longer available, and since the College Entrance Examination Board is now offering the new mathematical examinations Alpha, Beta, and Gamma in its place, it is suggested that these new examinations be given a trial. It would remain, however, for a future study similar to this one, by comparing the results of such a study with those found here, to determine whether the new mathematical examinations are more closely related to marks in mathematics and science than the original mathematical section.

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[5] *Twenty-Sixth Annual Report of the College Entrance Examination Board,* 1926, p. 8.

[6] Ruth K. Byrns, "Scholastic Aptitude and Freshman Achievement," *School and Society,* XXXV: 718, May 21, 1932.

A. B. Crawford, "Forecasting Freshman Achievement," *School and Society,* XXXI: 129, January 25, 1930.

Frank S. Freeman, "Predicting Academic Survival," *Journal of Educational Research,* XXIII: 116, February, 1931.

David Segel, *Prediction of Success in College,* U. S. Office of Education Bulletin, 1934, No. 15, p. 19.

SUMMARY

The object of this investigation was to determine the relationship between scores on the verbal and mathematical sections of the Scholastic Aptitude Test of the College Entrance Examination Board and marks in specific courses in first-year chemistry, first-year mathematics, and elementary physics at the University of Pennsylvania during the years 1930-36. A total of 9251 marks were studied, involving 2466 students and sixteen courses.

Separate coefficients of correlation were calculated by the Pearson product-moment method for each year and for the entire period between scores on each of the two sections of the Scholastic Aptitude Test and marks in each of the courses.

The following results were obtained:

1. The correlations on the mathematical section were higher than those on the verbal section for every course.

2. The correlations on the mathematical section were all above 0.4, with few exceptions.

3. The relationship between the verbal section and achievement in chemistry and mathematics was low.

4. The verbal section made its best showing, in comparison to the mathematical section, in the physics courses. It seems advisable, therefore, in the case of physics, to use the verbal section in conjunction with a mathematical section.

5. The results of this investigation indicate the continued need for a mathematical section, or its equivalent, in the Scholastic Aptitude Test for mathematics and science.

—*Volume 13, Number 1*

PREDICTIVE VALUE OF CERTAIN MEASURES FOR SUCCESS IN MAJOR SUBJECTS

JULIA O'SULLIVAN

THE major aim of this study is to secure objective and reliable data that will enable educational counselors to assist students of Hunter College to select their majors with greater wisdom. It is the purpose of this study to analyze, evaluate and compare pre-admission data, such as the Regents average in the major field, a placement-test score in the major subject and a psychological-examination score to determine which of these factors individually or collectively is the best index of success in the major field in college. In addition to the pre-admission data which are mentioned above, the prognostic value of the first-semester grade in the major subject was studied.

There is an acute need for this type of information because many students select a major unwisely and later seek to change it. The application for a change of major is often the result of maladjustment to the first choice of major. Thus, if educational counselors possessed reliable information as to the indices of success in a given major, they could advise students with greater certainty.

This information would benefit the student educationally and psychologically, since the correct choice of major at the beginning of her college career would prevent the loss of time, the discouragement and emotional stress that may accompany failure in an unsuitable major. This information would also be valuable to the administration since it would tend to reduce changes of major and failures in major courses.

PROCEDURE. The subjects of this investigation were 452 freshmen who were admitted to Hunter College in February 1934, and 654 freshmen who were admitted to Hunter College in September 1933. They were enrolled in the following majors: biology, chemis-

try, French, history, mathematics, and pre-medical.[1] The records of these students on all the variables included for study were secured from the office of the Registrar and from the office of the Bureau of Educational Guidance.

The following is a list of the variables which were employed:

1. Psychological-Test Score. Since intelligence undoubtedly is a factor which conditions success in college majors, the relationship between intellectual ability, as measured by the American Council Psychological Examination (1933 edition), and success in the majors was studied. The raw scores were used in this investigation.

2. Regents Average in Major Subject. Since it is logical to assume that previous preparation and success in a given subject are related to future success in that subject, the relationship between a student's previous record in a given subject, measured by the Regents average in the major subject, and success in that subject in college was investigated. The Regents average that was employed consisted of an arithmetic average of all Regents marks in the high-school subject that was identical with or allied to the subject that was chosen as a college major.

3. Placement-Test Score. Another measure of previous preparation that was studied to determine its prognostic value was a placement-test score. The following placement tests of the Cooperative Test Series which were related to the majors chosen were administered:

Major	*Placement Test*
Biology	Co-operative *General Science* Test Experimental Edition, Form D 1, 1934
Chemistry	Co-operative *General Science* Test Experimental Edition, Form D 1, 1934
French	Co-operative *French Grammar* Test Experimental Edition, Form 8, 1933 Co-operative *French Reading* Test Experimental Edition, Form 6, 1934

[1] Since the number of students enrolled in the chemistry and pre-medical groups was so small they were combined. For both of these groups the major field is chemistry.

TABLE I

ZERO ORDER CORRELATION COEFFICIENTS BETWEEN VARIOUS PREDICTIVE MEASURES AND FIRST AND SECOND SEMESTER GRADES*

Predictive Measure	First Semester Grade					Second Semester Grade				
	French N=121	Mathematics N=78	Chemistry N=63	Biology N=92	History N=98	French N=78	Mathematics N=61	Chemistry N=43	Biology N=43	History N=81
First Semester Grade in Major						.495±.058	.628±.052	.610±.067	.465±.063	.380±.064
Regents Average	.478±.047	.575±.051	.529±.061	.197±.068	.335±.060	.247±.072	.287±.079	.437±.083	.323±.072	.272±.069
Placement Test Score	.639±.036	.367±.066	.210±.081	.130±.069	.193±.066	.462±.060	.269±.080	.340±.090	.210±.077	.355±.066
A.C.E.†	.228±.058	.293±.070	.315±.077	.088±.070	−.043±.068	.279±.070	.212±.083	.268±.094	.144±.078	.349±.064

* The correlations reported in this table are for the class of February 1934. All of the variables enumerated above were not available for both classes. However, where the same variables were available for both classes the correlation coefficients were quite similar.

† A.C.E. denotes American Council Psychological Examination raw score.

	Co-operative *French Vocabulary* Test Experimental Edition, Form 6, 1933
History	Co-operative *General Culture* Test Part I, 1933
Mathematics	Co-operative *General Mathematics* Test for College Students, 1933.

4. First-Semester Grade in Major Subject. In addition to investigating the prognostic value of previous preparation in a given subject in high school, the value of the first-semester college grade in the major subject was studied to ascertain its relationship to success in the second-semester major course.

5. Criterion of Success. The criterion of success that was used in this investigation was academic success in the major as measured by college grades in the major subject for the first and second semesters transmuted into a weighted index number.

The recognized statistical methods which are used in prognosis studies were employed. They are coefficients of correlation (simple, partial, and multiple) and regression equations. The simple or zero order correlation coefficient measures the relationship between the grades received in the major and each of the prognostic measures. The multiple correlation coefficient expresses the relationship between the grades received in the major and two or more of the prognostic measures. The rectilinear regression equation is used to predict or forecast the probable grades students would receive in the major.

FINDINGS. In Table I are listed the zero order coefficients of correlation between the various predictive measures which were used, and first and second semester grades in the major.

An analysis of the data in Table I reveals the following points which are the most significant findings of the study.

1. For all majors except the French major, the Regents average in the major subject or in the allied subject was the best single index of success in the first-semester major course. For the French, mathematics, and chemistry majors the correlational relationship was substantial; for the history and biology majors the correlational relationship was slight.

2. For all majors except the French and history majors the Regents average in the major subject was the second best index of success in the second-semester major course, but in no instance was the relationship substantial enough for predictive purposes.

3. The only placement test that correlated to a substantial degree with work in the major course was the Cooperative French Test which correlated with the first-semester French grade to the extent of r.639, and it was only slightly inferior to the first-semester French grade for predicting success in the second-semester French course.

4. For the other majors the placement-test score correlated with the first- and second-semester grades to too slight an extent to be of value for prediction.

5. For all majors except the chemistry major, the American Council Psychological Examination total score was the least valuable index for predicting success in the first-semester major course. For the chemistry major it was slightly superior to the placement-test score. The coefficients of correlation between the first-semester grade in the major subject and the American Council Psychological Examination were too low for purposes of prediction.

6. Similarly, for all majors except the history major, the American Council Psychological Examination total score was the least valuable index of success in the second-semester major course. In no case was the correlation high enough to be significant.

7. The American Council Psychological Examination correlated more closely with success in the more general subjects, such as history and chemistry, than with subjects which have a more specialized subject matter, such as mathematics and French.

8. The first-semester grade in the major subject was consistently the best index of success in the second-semester major course.

9. Success in the French major was consistently the easiest to predict. The correlation coefficients secured for the French major were the highest.

Next in order of predictability followed the chemistry and mathematics majors with the chemistry major easier to predict by a very slight amount. The majors in which it was most difficult to

predict success were the biology and history majors. It was slightly more difficult to predict success for the history major.

After an analysis of the zero order correlations the following question naturally presents itself: Would a combination of these variables yield predictive data of a higher order than that secured by the zero order correlations? If so, which combination would provide the best basis for prediction? The data in Table II, which compares the highest zero order coefficients of correlation with the highest multiple coefficients of correlation, provide an answer to this question.

A study of Table II reveals that a combination of the predictive measures employed did not yield significantly higher correlations, except in the case of the history major, where the addition of the American Council Psychological Examination total score to the first-semester major grade for predicting the second-semester grade increased the correlation to a marked extent. Thus, $r_{21} = .380$ was changed to $R_{2 \cdot 15} = .557$ when the psychological test score was combined with the first-semester grade for predicting the second-semester grade. In all other instances the increase in the size of the correlation coefficients that resulted when the multiple correlation technique was employed was so insignificant that it did not justify the labor involved in the calculations of the multiple correlation coefficients.

The results of this study verify the conclusion of other investigators, namely, that past performance is the best index of success. This study revealed that in most instances the best index of success in the major for the first semester was the Regents average, which was a record of past achievement. Furthermore, the best index of success in the major for the second semester was the first semester-grade in the major subjects which was a record of past achievement.

Furthermore, this study justifies with objective and experimental data the present system of major election guidance at Hunter College. The measures of academic achievement which the counselors have empirically found to be of value in guiding students in the election of majors correspond to the measures which this study

TABLE II

HIGHEST ZERO ORDER AND HIGHEST MULTIPLE COEFFICIENTS OF CORRELATION FOR VARIOUS PREDICTIVE MEASURES AND FIRST AND SECOND SEMESTER GRADES*

Major	First Semester	Second Semester
French	(N=121) r_{13}=.639−.036 $R_{1.345}$=.668−.034	(N=78) r_{21}=.495−.058 $R_{2.1345}$=.558−.053
Mathematics	(N=78) r_{14}=.575−.051 $R_{1.345}$=.615−.047	(N=61) r_{21}=.628−.052 $R_{2.1435}$=.647−.050
Chemistry	(N=63) r_{14}=.529−.061 $R_{1.345}$=.542−.060	(N=43) r_{21}=.610−.067 $R_{2.1435}$=.654−.059
Biology†	(N 92) r_{14}=.197−.068	(N=71) r_{21}=.465−.063 $R_{2.1435}$=.539−.057
History	(N=98) r_{14}=.335−.060 $R_{1.345}$=.375−.059	(N=81) r_{21}=.380−.064 $R_{2.1354}$=.564−.050

* Variable 1—First semester grade
Variable 2—Second semester grade
Variable 3—Placement test score
Variable 4—Regents Average
Variable 5—American Council Psychological Examination total score

† Since the zero order correlations were so low and unreliable for this major the multiple correlation coefficients were not computed.

found to be most indicative of success in the major field. They are Regents grades in the major subject and the first-semester college grade in the major subject.[2]

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[2] In addition to the measures mentioned above the counselors use all other available data. The analysis of the student's record is supplemented by a personal conference with the student through which additional information is secured.

ABILITY VERSUS SCHOOL GRADES

CHRISTIAN MILLER

IS THERE any significant difference in the average ability of the students in the different college classes? That is, are the seniors smarter than the freshmen, or vice versa? Is the college selecting the better qualified students and weeding out the less able? What is the relationship between ability and the semester grades received? No answer can be very final, of course, since the make-up of the various classes changes from year to year, but an interesting picture of the student body of one typical liberal arts college was obtained for the first semester of the year 1936-37 by tabulating certain data available through the registrar's office.

Two criteria were used to measure student ability. The first was the student's percentile rank on the American Council on Education Psychological Examination. The second was the student's quartile rank in his high school class.

In the tabulations presented, each student was counted as often

TABLE I

RANK ON THE PSYCHOLOGICAL TEST OF STUDENTS IN THE VARIOUS COLLEGE CLASSES. ENTIRE ENROLMENT, FIRST SEMESTER 1936–37

Percentile Ranking	Percentage of Class in Each Decile							Total Number
	Special	Graduate	Senior	Junior	Sophomore	Freshman	Total	
90–99	0	15.1	9.6	10.6	13.5	11.2	11.4	356
80–89	0	4.6	9.9	11.8	14.9	7.1	10.0	314
70–79	3.1	15.2	10.3	14.0	7.0	8.3	9.4	293
60–69	0	12.1	6.7	9.7	12.2	9.5	9.7	304
50–59	12.5	0	3.8	10.6	9.0	12.4	9.7	304
40–49	0	6.1	3.6	8.5	7.3	7.6	7.0	218
30–39	0	3.0	13.6	4.8	14.1	14.1	10.7	334
20–29	25.0	0	10.1	6.2	9.1	9.1	8.8	275
10–19	0	7.6	8.0	6.4	5.5	5.5	5.6	174
0– 9	0	0	5.5	3.0	8.7	8.7	5.9	186
No Inf.	59.4	36.3	18.9	14.4	6.5	6.5	11.8	368
Number	32	66	476	582	754	1270	3126	3126
Mean %ile	38.1	66.7	51.9	59.4	59.0	51.2	54.7	

as he received a grade in a subject. Thus the basic number 3126 in the different tables represents the total number of registrations and not the number of different students, which was about 650. Table I shows the percentile rank for the classes on the psychological examination.

Of the total registrations in the college, 11.4 per cent placed in the upper decile, 10.0 per cent in the next, etc., down to 5.9 per cent which placed in the lowest decile group. The freshmen and the sophomores both have the highest percentages of students in the lowest decile, 8.7 each. The juniors have only 3.0 per cent in this group. The sophomores have the highest percentage in the upper decile.

The mean percentile ranking for the entire college enrolment was 54.7. When compared with the college average, the freshmen, seniors, and special students are below average, while the sophomores, juniors, and graduate students are above. The means are: freshmen 51.2, sophomores 59.0, juniors, 59.4, seniors 51.9, graduates 66.7, and specials 38.1. The last two groups are so small in number that the means are probably not significant.

It is evident that there is a difference, though not a very marked difference, in general ability from class to class. Does the college retain, or select, for its upper classes the better students, or does it lose them? The progressively higher mean from freshman to junior classes and for the graduates would imply one answer, but the mean for the senior class leads one to doubt such a conclusion. Has this class always been below the average, or has the college failed to select the better qualified from among those who entered this group? The mortality of the class has been unusually high coming through the heart of the depression.

Table II shows class differences on the second of the two general criteria of ability, the student's rank in his high school class.

This table shows that 31.0 per cent of the college enrolment came from the highest quartile in the high schools, 23.8 per cent came from the second, 14.3 per cent came from the third, and only 5.6 per cent came from the fourth or lowest quartile; 25.3 per cent had not been ranked by their schools. The distributions for the different classes can be read directly from the table. Since

TABLE II

RANK IN HIGH SCHOOL CLASS OF STUDENTS IN THE VARIOUS COLLEGE CLASSES. ENTIRE ENROLMENT, FIRST SEMESTER 1936–37

Quartile Rank	Percentage of Class in Each Quartile							Total Number
	Special	Graduate	Senior	Junior	Sophomore	Freshman	Total	
I	0	19.7	31.9	36.3	37.4	26.1	31.0	970
II	15.6	7.6	16.8	25.8	19.1	29.4	23.8	744
III	0	0	20.0	8.7	7.4	19.7	14.3	447
IV	0	10.6	2.3	1.5	6.5	7.9	5.6	175
No Inf.	84.4	62.1	29.0	27.7	29.6	16.9	25.3	790
Total Number	32	66	476	528	754	1270	3126	3126

the "No Information" group is so large, one may assume that they would distribute themselves among the rest of the student body and, if included, would not change the percentages very much. Thus, in spite of the fact that the admission procedure was not a particularly selective one very few students were enroled who had not been in the three upper quarters of their preparatory school class.

Now what about their performance as measured by school grades for the semester? Table III gives one answer to this question.

This table consists of the seven grade distribution curves showing the percentage of the semester grades of each level assigned to members of the various college classes and to the student body as

TABLE III

DISTRIBUTION OF GRADES BY COLLEGE CLASSES, FIRST SEMESTER 1936–37

Semester Grade	Percentage of Class Receiving Each Grade						
	Special	Graduate	Senior	Junior	Sophomore	Freshman	Total
A	6.2	13.7	22.3	12.9	13.8	8.1	12.5
B	46.9	60.6	37.6	37.7	32.5	29.1	33.5
C	21.9	15.2	29.8	37.5	35.0	38.2	35.4
D	3.1	3.0	3.2	4.4	9.7	12.4	8.8
I & K	9.4	9.1	6.7	6.2	5.0	5.7	5.9
F	12.5	0	.4	1.3	4.0	6.1	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a whole. The institutional grade curve is the last column in the table. This shows that the entire student body received 12.5 per cent of A grades, 33.5 per cent of B's, 35.4 per cent of C's, 8.8 per cent of D's, 5.9 per cent of incomplete or conditioned grades, and 3.9 per cent of F grades. This shows that the faculty, as a whole, is considerably more generous with the high grades than it is with the low, but not very much unduly so, considering the average ability indexes of the student population at this college.

The freshmen received the lowest percentage of A grades, or 8.1 per cent. The seniors, who when judged by their average ability index appeared to be of about the same ability (see means of Table I), received 22.3 per cent of A's. The freshmen received the highest percentage of C's, and a much higher percentage of D's than any other class. The freshman curve is the only one that does not show an undue skewness for the higher grades.

So, whether the intelligence level of the class increased or not, the four years in college probably has profited the older students something. At least they get higher grades from their instructors.

To what extent do the two criteria of ability agree with each

TABLE IV

RELATIONSHIP BETWEEN QUARTILE RANK IN HIGH SCHOOL CLASS AND DECILE RANK ON THE PSYCHOLOGICAL EXAMINATION

Percentile Ranking	Rank in High School Class										Total
	No Inf.		IV		III		II		I		
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.
90–99	61	7.7	0	0	16	3.6	62	8.3	217	22.4	356
80–89	34	4.3	0	0	19	4.3	66	8.9	195	20.1	314
70–79	46	5.8	6	3.4	18	4.0	76	10.2	147	15.1	293
60–69	48	6.1	16	9.2	42	9.4	75	10.1	123	12.7	304
50–59	43	5.4	9	5.1	41	9.2	123	16.5	88	9.1	304
40–49	50	6.3	13	7.4	44	9.8	77	10.3	34	3.5	218
30–39	65	8.2	29	16.6	76	17.0	105	14.1	59	6.1	334
20–29	77	9.8	26	14.9	58	13.0	66	8.9	48	4.9	275
10–19	52	6.6	6	3.4	56	12.5	43	5.8	17	1.7	174
0– 9	52	6.6	42	24.0	53	11.9	17	2.3	22	2.3	186
No. Inf.	262	33.2	28	16.0	24	5.3	34	4.6	20	2.1	368
Totals	709	100.0	175	100.0	447	100.0	744	100.0	970	100.0	3126

other? That is, is the rank in the high school class apt to agree with the performance on the freshman psychological examination? Table IV attempts to given an answer. Both numbers and percentages are presented for ease of comparison.

Of the 970 students who ranked in the first or highest quartile in high school, 22.4 per cent made scores on the psychological examination which placed them in the upper decile. Only 2.3 per cent placed in the lowest decile. The hard question to answer would be why any of them placed in the lower half of the scale. Of the 175 ranked in the fourth, or lowest quartile, none made a ranking on the psychological test in either of the two upper deciles, while 24.0 per cent of them placed in the lowest decile on the test.

The significance of the student's rank in high school is clearly evident in this table. This rank, when based on average grades over the four-year preparatory course, is pretty strongly substantiated on his performance with the American Council test. The agreement is far from perfect, but very significant.

Table V attempts to show the same facts broken up by college classes. Because of limited space only the mean percentile rankings of the different classes are shown for each high school quartile.

There were no "special" students who ranked in the first quartile of their high school class. The mean for the graduates was 60.4; for the seniors, 64.5; for the juniors, 72.6; for the sopho-

TABLE V

RELATIONSHIP BETWEEN QUARTILE RANK IN HIGH SCHOOL CLASS AND DECILE RANK ON THE PSYCHOLOGICAL TEST. ENTIRE ENROLMENT, FIRST SEMESTER, 1936–37

Quartile Rank in H.S. Class	Mean Psychological Percentile Ranking of Students in the Different College Classes						
	Special	Graduate	Senior	Junior	Sophomore	Freshman	Total
I	0	60.4	64.5	72.6	71.4	69.1	68.3
II	22.5	59.0	50.1	57.0	55.3	53.6	51.6
III	0	0	37.7	37.4	44.4	39.0	37.3
IV	0	65.0	0	21.3	37.7	26.1	25.9
No Inf.	46.3	74.4	45.0	48.1	50.7	42.9	47.6
Total	38.1	66.7	51.9	59.4	59.0	51.2	54.7

mores, 71.4; and for the freshmen, 69.1. The mean for the entire number of registrations in this quartile was 68.3. For students in the fourth or lowest quartile the corresponding means were: 0 for special, 65.0 for graduate, 0 for senior, 21.3 for junior, 37.7 for sophomore, and 26.1 for the freshman classes, and 25.9 for the entire group of registrants of this quartile.

Since about one-fourth of the student body has not been ranked in high school, the means for the "No Information" group will give some indication of how they might place if included. These are: for special students, 46.3; graduate, 74.4; for senior, 45.0; for junior, 48.1; for sophomore, 50.7; for freshman, 42.9; and for the entire group of 790 registrants, 47.6. This is somewhat below the mean for the entire college group, 54.7, but indicates a fairly normal distribution for any given class, or only slight variation.

In general, it would seem that the rank in high school class has a tendency to be higher than the student's corresponding placement on the psychological examination. Nevertheless it is indicative of his native ability. In a valid guidance program these two criteria should certainly be used to corroborate aand strengthen each other.

What correlation is there between these indexes of ability and the semester grades received in the courses for which the students registered? The ordinary school grades being what they are, any answer is likely to be open to all sorts of criticism, but Tables VI and VII present a few facts bearing on the question. Table VI shows the relationship between the rank in high school class, broken up by college classes, and the semester grades received in courses.

Since the number of special students and graduates included in the total enrolment is too small to be very significant, and is not typical of the student body as a whole, attention need only be called to the four regular college classes.

Of the senior students who ranked in the highest quartile of their high school class, none failed; 6.6 per cent received incomplete or conditional grades; .7 per cent received D's; 21.7 per cent received C's; 29.6 per cent B's; and 41.4 per cent got A grades. Freshmen of equal rank in high school received 2.1 per cent of failures; 1.8 per cent I or K grades; 2.4 per cent D's; 30.2 per cent C's; 44.1

TABLE VI

RELATIONSHIP BETWEEN QUARTILE RANK IN HIGH SCHOOL CLASS AND FIRST SEMESTER GRADES. ENTIRE ENROLMENT, FIRST SEMESTER, 1936-37

Rank in H.S. Class	Percentage of Students Receiving Each Grade							
Quartile	Class	F	I & K	D	C	B	A	Total Number
I	Special	0	0	0	0	0	0	0
	Graduate	0	0	0	15.4	76.9	7.7	13
	Senior	0	6.6	.7	21.7	29.6	41.4	152
	Junior	0	2.6	1.1	27.6	45.3	23.4	192
	Sophomore	0	.7	2.9	26.6	45.0	24.8	282
	Freshman	2.1	1.8	2.4	30.2	44.1	19.4	331
	Total	.7	2.4	1.9	27.1	42.8	25.1	970
II	Special	0	0	0	20.0	80.0	0	5
	Graduate	0	0	0	0	100.0	0	5
	Senior	0	7.5	2.5	36.3	40.0	13.7	80
	Junior	1.5	8.8	2.9	39.0	38.2	9.6	136
	Sophomore	3.5	6.2	9.7	50.7	23.6	6.3	144
	Freshman	3.7	3.5	10.7	46.0	32.1	4.0	374
	Total	2.8	5.4	8.1	44.1	33.2	6.4	744
III	Special	0	0	0	0	0	0	0
	Graduate	0	0	0	0	0	0	0
	Senior	2.1	7.5	5.3	37.2	43.6	4.3	95
	Junior	2.2	8.7	15.2	56.5	15.2	2.2	46
	Sophomore	14.3	10.7	17.9	30.4	19.6	7.1	56
	Freshman	6.8	8.4	18.8	43.6	18.0	4.4	250
	Total	6.3	8.5	15.4	41.8	23.3	4.7	447
IV	Special	0	0	0	0	0	0	0
	Graduate	0	0	14.1	28.6	28.6	28.6	7
	Senior	0	0	0	45.5	45.5	9.0	11
	Junior	12.5	0	37.5	25.0	25.0	0	8
	Sophomore	14.2	8.2	34.7	34.7	8.2	0	49
	Freshman	20.0	17.0	28.0	23.0	12.0	0	100
	Total	16.0	12.0	28.0	28.0	14.3	1.7	175
No Inf.	Special	14.8	11.1	3.7	22.2	40.7	7.4	27
	Graduate	0	14.6	2.5	14.6	53.7	14.6	41
	Senior	0	6.5	5.1	29.0	40.6	18.8	138
	Junior	2.1	8.2	4.8	43.8	34.9	6.2	146
	Sophomore	4.5	7.6	10.8	36.8	30.9	9.4	223
	Freshman	8.8	7.4	18.1	37.7	21.9	6.1	215
	Total	4.6	8.0	10.0	35.3	32.4	9.7	790
Combined	Special	12.5	9.4	3.1	21.9	46.8	6.3	
	Graduate	0	9.1	3.0	15.2	59.1	13.6	
	Senior	.4	6.7	3.2	29.8	37.6	22.3	
	Junior	1.3	6.2	4.4	37.5	37.7	12.9	
	Sophomore	4.0	5.0	9.7	35.0	32.5	13.8	
	Freshman	6.1	5.7	12.8	38.2	29.1	8.1	
	Total	3.9	5.9	8.8	35.4	33.5	12.5	3126

per cent B's; and only 19.4 per cent of A grades. There is no appreciable difference in the percentage of the grades as assigned to the junior and sophomore students. This hints at a tendency to give high grades to seniors.

The difference between freshmen and seniors in the fourth quartile is even more striking. No senior of this quartile received any of the three lowest grades, but 45.5 per cent each of C and B grades, and even 9.0 per cent of A grades. No freshman in this quartile received an A grade, only 12.0 per cent B's, 23.0 per cent C's, 28.0 per cent D's, 17.0 per cent I or K grades, and 20.0 per cent failed. In other words these freshmen received 65.0 per cent unsatisfactory grades. This is indeed significant.

For comparative purposes the grade curves for all classes have been combined in the bottom part of the table. This is the same as Table III.

TABLE VII

RELATIONSHIP BETWEEN DECILE RANK ON THE PSYCHOLOGICAL TEST AND FIRST SEMESTER GRADES. ENTIRE ENROLMENT, FIRST SEMESTER, 1936–1937

Decile Rank	Class	Percentage of Students Receiving Each Grade						Total Number
		F	I & K	D	C	B	A	
90–99	Special	0	0	0	0	0	0	0
	Graduate	0	0	0	10.0	90.0	0	10
	Senior	0	13.0	0	19.6	28.3	39.1	46
	Junior	0	7.2	1.8	23.2	44.6	23.2	56
	Sophomore	0	1.0	2.9	19.6	39.2	37.3	102
	Freshman	.7	2.8	.7	21.1	46.5	28.2	142
	Total	.3	4.2	1.4	20.5	43.0	30.6	356
0–9	Special	0	0	0	0	0	0	0
	Graduate	0	0	0	0	0	0	0
	Senior	0	3.8	7.7	42.3	38.5	7.7	26
	Junior	0	0	12.5	68.8	18.7	0	16
	Sophomore	11.8	17.6	32.4	26.4	11.8	0	34
	Freshman	12.9	8.1	31.8	27.3	15.5	0	110
	Total	12.9	8.1	26.9	32.8	18.3	1.0	186

For lack of space only the upper and lower deciles of the psychological rankings can be presented for comparison with Table VI.

The correlation between the ability index and the school grades here evidently is higher than in the previous table. Of the seniors

who ranked in the highest decile, none received an F grade, 13.0 per cent received I or K, none D, 19.6 per cent C, 28.3 per cent B, and 39.1 per cent A grades. The freshmen of this same intelligence level received .7 per cent F, 2.8 per cent I or K, .7 per cent D, 21.1 per cent C, 46.5 per cent B, and 28.2 per cent of A grades. The freshmen did not get as many of the highest grades, but more B's.

In the lowest decile, the seniors get consistently higher percentages of A's, B's, and C's, while the freshmen get much higher percentages of F, I or K, and D grades.

CONCLUSIONS

Such variations as have been presented need to be considered seriously in the guidance of college students. There are very evident differences in the ability levels of the different classes. The school grades do not in general correlate very highly with the ability levels as indicated on the criteria presented. Given equal rank on either of the criteria, the seniors seem to be favored with the higher grades. Just what the elements may be which cause this bias cannot be determined from the data at hand.

—Volume 13, Number 1

A STUDY OF ACHIEVEMENT IN THREE LUTHERAN LIBERAL ARTS COLLEGES

HERBERT G. GEBERT

THE purpose of this study is to analyze the achievement of college sophomores and seniors of three liberal arts colleges in Pennsylvania, namely, Gettysburg, Muhlenberg, and Thiel, from the standpoint of two independent measures of success—test scores and college grades. Closely integrated are the interpretations of the Carnegie Foundation for the Advancement of Teaching and those which appear to be justified on the basis of the analysis which is followed in the treatment of the data. Research studies which have bearing on the problem are included in order to act as a check on both the findings of the Carnegie Foundation for the Advancement of Teaching and of this study. The interpretations of the study serve as an integrative factor in the organization of the material. Four subdivisions are inherent in the problem and constitute the major elements:

1. A comparison of the achievement of the colleges represented in this study and other colleges of the states which participated in the Pennsylvania Study.

2. A study of the effect of certain variables—age, amount of training, intelligence, and time elapsed—upon achievement.

3. An analysis of the consistency of the data which were employed.

4. A comparison of the predicted success and the subsequent success of the students in light of the measures which were employed in the study.

The three colleges in this study (Study Group) required all of the seniors to take the Carnegie examination in 1928. The colleges did the same with the sophomores in 1930 and the seniors in 1932. Since participation in the various Carnegie examinations was a voluntary matter with the colleges, not all of the colleges (State

Group) followed the procedure of the colleges in this study (Study Group).

METHOD OF PROCEDURE

The test results of the Study Group were compared with those of the State Group by means of the percentile curves. The ratio of the differences between the means of the two groups for all the tests was secured by dividing the difference between the means by the standard deviation of the difference. In order to be considered significant, a difference between the means had to be three times the standard deviation of the differences. No significant differences between the means of the total scores were evident between the State Group and the Study Group in 1928, 1930, and 1932.

Product-moment correlations were secured for the variables of the Study Group for chronological age, college grades, amount of training, intelligence, and time elapsed since taking mathematics courses. The consistency of the test data was also found by the use of the product-moment formula. Etas were secured for all zero order correlations. Linearity was tested by means of the Blakeman test for linearity.

Partial correlations of the first, second, and third order were employed in order to discover the effects of certain variables when other variables were held constant.

English and mathematics test scores were predicted from English and mathematics grades of 1930 by means of the following formula:

$$Y = r\frac{\sigma_y}{\sigma_x}X - r\frac{\sigma_y}{\sigma_x}M_x + M_y$$

The predicted scores were subtracted algebraically from the obtained scores of 1930 and arranged in tables in which the class intervals were taken in steps of one probable error of the estimate. The predicted scores of 1930 were also subtracted algebraically from the obtained scores of 1932. The formula for the probable error of the estimate is

$$\text{P.E. (est. Y)} = .6745\sigma_y\sqrt{1 - 2^2}$$

A similar procedure was followed in dealing with the English and mathematics grades which were predicted from the test scores.

TABLE I

DIFFERENCES BETWEEN STUDY GROUP AND STATE GROUP ON SOPHOMORE EXAMINATION, MAY, 1930

Subject	Group	Mean	S.D.dist.	S.D.	Differ. between Means	S.D.diff.	Ratio D / S.D.diff.
Intelligence	Study	55.37	9.42	.54			
	State	56.45	9.52	.14	1.08	.557	1.93
Total English	Study	191.21	49.79	2.89			
	State	200.89	53.99	.82	9.68	3.003	3.22
Spelling	Study	23.17	9.52	.45			
	State	23.13	10.50	.14	.04	.471	.08
Grammar	Study	23.20	9.09	.42			
	State	25.48	9.26	.12	2.28	.436	5.22
Punctuation	Study	24.20	8.24	.47			
	State	25.95	8.16	.11	1.75	.482	3.63
Vocabulary	Study	51.53	16.69	.97			
	State	54.61	17.75	.24	3.08	.999	3.08
Literature	Study	69.87	20.23	1.17			
	State	67.68	22.57	.31	2.19	1.210	1.80
Mathematics	Study	78.08	32.70	1.90			
	State	79.99	42.80	.65	1.91	2.007	.95
General Culture	Study	297.71	84.37	4.90			
	State	271.73	93.18	1.41	25.98	5.098	5.09
General Science	Study	96.95	32.32	1.87			
	State	92.27	37.27	.52	4.68	1.930	2.42
Social Studies	Study	80.47	39.24	2.28			
	State	71.55	38.45	.45	8.92	2.343	3.80
Total Common Subjects	Study	562.09	129.10	7.50			
	State	559.41	151.48	2.28	2.68	7.838	.34

FINDINGS

1. The data for the Study Group are typical of the data for the State Group which were reported by the Carnegie Foundation for the Advancement of Teaching.

2. The percentile curves for both the Study Group and the State Group assume different forms for the various tests.

3. The college grades which were used in this study distribute themselves according to the normal probability curve as shown by the results of the Chi-Square test. This was true of both the English grades and the mathematics grades.

4. There is a wide range of variability between the performance of the lowest student and the performance of the highest student.

5. No significant difference was found between the average performance of the Study Group and the State Group on the examination which was given by the Carnegie Foundation for the Advancement of Teaching in 1928.

6. No significant difference was found in average intelligence between the Study Group and the State Group in 1930 and 1932.

7. There are significant differences between the means of the intelligence scores in 1930 and in 1932 for both the Study Group and the State Group.

8. The mean of the Study Group is lower than the mean of the State Group in total English score both in 1930 and in 1932.

9. The mean of the total English score for the State Group is significantly higher in 1932 than in 1930.

10. There are no significant differences between the means of the mathematics scores of the Study Group or the State Group in 1930 or in 1932.

11. There are significant differences between the means for General Culture both in 1930 and in 1932 between the Study Group and the State Group. The Study Group is higher.

12. The Study Group and the State Group both show significant differences between the means of 1930 and 1932 in Total Common Subjects.

13. There is no significant difference between the means of the Study Group and the State Group for the Total Common Subjects in 1930. The same is true in 1932.

14. The Study Group shows wide ranges of variability in 1930 and in 1932 in age, college grades, amount of training, and time elapsed since taking courses in mathematics.

TABLE II

CORRELATIONS OF THE CARNEGIE ACHIEVEMENT TESTS WHICH WERE GIVEN IN MAY, 1930

Variable		1930	
x	y	r	P.E.
Total English	Spelling	.6586	.0229
Total English	Grammar	.7517	.0190
Total English	Punctuation	.6947	.0207
Total English	Vocabulary	.8333	.0123
Total English	Literature	.8149	.0136
Total English	Mathematics	.0505	.0395
Total English	General Science	.3621	.0341
Total English	Social Studies	.4287	.0324
Total English	General Culture	.5483	.0279
Total English	Total Common Subjects	.7714	.0165
Mathematics	Total English	.0505	.0395
Mathematics	General Science	.4088	.0329
Mathematics	Social Studies	.0535	.0395
Mathematics	General Culture	.1619	.0385
Mathematics	Total Common Subjects	.3878	.0336
General Culture	Vocabulary	.5571	.0274
General Culture	Literature	.5556	.0276
General Culture	Total English	.5483	.0279
Geceral Culture	Mathematics	.1619	.0385
General Culture	General Science	.5919	.0257
General Culture	Total Common Subjects	.9046	.0075
Total Common Subjects	Total English	.7714	.0165
Total Common Subjects	Mathematics	.3878	.0336
Total Common Subjects	General Science	.6488	.0228
Total Common Subjects	General Culture	.9046	.0075

15. Age shows a negative relationship with English grades, English score, and intelligence.

16. English grades show a positive relationship with mathematics grades, total English score, literature score, and hours of credit in English (in 1932).

17. Mathematics grades show a positive relationship with English grades, mathematics score, and hours of credit in mathematics (in 1930).

18. There was no relationship between age and hours of credit in English, mathematics grades, hours of credit in mathematics, and mathematics score.

TABLE III

PARTIAL CORRELATIONS FOR TOTAL COMMON SUBJECTS, ENGLISH MATHEMATICS, AND GENERAL CULTURE*

PARTIAL CORRELATION	1930	1932
$r_{12.4}$	.7725	.6737
$r_{13.4}$	.5737	.4912
$r_{23.4}$	−.0464	−.1466
$r_{12.34}$	.9766	.7494
$r_{13.24}$	.9609	.8069

* Subscripts indicate: 1, Total Common Subjects; 2, English; 3, Mathematics; 4, General Culture.

19. Hours of credit in English show a positive relationship with English grades, total English score, and literature score.

20. Hours of credit in mathematics show a positive relationship with mathematics score, and mathematics grades (in 1930).

21. Intelligence correlates positively with total English score, spelling, grammar, punctuation, vocabulary, literature, mathematics, General Culture, General Science, Social Studies, and Total Common Subjects. The amount of correlation is highest with Total Common Subjects in 1930 and lowest with Social Studies in 1930.

22. There are significant negative correlations between semesters elapsed and mathematics score.

23. The tests correlated with each other and with the subdivisions in a positive manner in all cases except total English score-mathematics score in 1930 and in 1932 when the correlations were not significant. The highest correlation was between Total Common Subjects-General Culture (.9272) in 1932.

24. The subdivisions of the tests correlated in a positive fashion with each other. The correlations were all significant and ranged from .265 to .738.

25. There is a drop in correlation between total English score-English grades, total English score-literature score, and English grades-literature score when the hours of credit in English are held constant. There is a further drop in correlation between total English score-English grades when literature score and hours of credit in English are held constant. There is also a drop in correlation between total English score-literature score when English

grades and hours of credit in English are held constant.

26. A marked drop in correlation takes place between literature score-grammar score and vocabulary score-grammar score when intelligence is held constant.

27. There is a rise in correlation between total English score-literature score when grammar and intelligence are held constant.

28. A decided drop occurs between total English score-vocabulary score when literature, grammar, and intelligence are held constant.

29. When vocabulary is held constant, the correlation between total English score-General Culture and total English score-General Science disappears. There is a drop in correlation between General Culture-General Science when vocabulary is held constant and also when vocabulary and General Culture are held constant.

30. The correlations between Total Common Subjects-total English score rises slightly in 1930 when General Culture is held constant and drops slightly in 1932 when General Culture is held constant.

31. The correlation between Total Common Subjects-mathematics score disappears or becomes negative when General Culture is held constant.

32. The zero order correlation of .3878 in 1930 between Total Common Subjects-mathematics score rises to .9609 when total English score and General Culture are held constant. The rise of correlation is not quite so great in 1932.

33. The zero order correlation of .771 in 1930 between Total Common Subjects-total English score rises to .976 when mathematics and General Culture are held constant. There is a slight drop in correlation in 1932 from .788 to .749.

34. When the test results for 1930 are correlated with the results for the same tests in 1932, the correlations are significantly positive. The correlations range from .667 in literature to .840 in total English score.

35. In 1930, 106 differences between English scores, which were predicted from English grades, and obtained English scores fell within a range of plus and minus one P.E. of the estimate. Eighty-

nine differences fell above the zero class level and 103 differences below it.

36. In 1932, 62 differences between predicted English scores and obtained English scores fell in the zero class interval, 50 differences fell above the zero class interval, and 105 differences below it.

37. In 1930, 152 differences between predicted English grades and obtained English grades fell in the zero class interval, 81 differences fell above the zero class interval, and 65 cases were below it.

38. In 1932, 106 differences between predicted English grades and obtained English grades fell in the zero class interval, 50 differences were above the zero class interval, and 61 differences below it.

39. In 1930, 101 differences between predicted mathematics scores and obtained mathematics scores fell in the zero class interval, 67 differences were above the zero class interval, and 62 differences were below it.

40. In 1932, 54 differences between predicted mathematics scores and obtained mathematics scores fell in the zero class interval, 63 differences were above the zero class interval, and 49 cases were below it.

41. In 1930, 105 differences between predicted mathematics grades and obtained mathematics grades fell in the zero class interval, 74 differences were above the zero class interval, and 51 differences were below it.

42. In 1932, 83 differences between predicted mathematics grades and obtained mathematics grades fell in the zero class interval, 42 differences were above the zero class interval, and 41 differences were below it.

43. The total variability for the differences between predicted scores and obtained scores was approximately the same in 1930 and in 1932.

CONCLUSIONS

1. On the basis of the total scores in the various examinations which were constructed by the Carnegie Foundation for the Advancement of Teaching, it may be concluded that the results for the

students employed in this study (Study Group) are typical of the results of the students of the state of Pennsylvania as a whole (State Group).

2. In interpreting the results of the examinations which were given in 1930 and in 1932, the Carnegie Foundation for the Advancement of Teaching based its conclusions upon the differences of the means in terms of raw scores rather than upon the basis of the ratio of the differences between the means. Consequently, it was difficult to determine in which cases true differences existed and in which cases the differences could be accounted for by the fluctuations in sampling. The findings of the present study show that significant differences occur between the means for the tests in 1930 and in 1932 for the Study Group and the State Group except in mathematics.

3. If the ratio of the difference between the means is accepted as a valid criterion, it would appear that the Carnegie Foundation for the Advancement of Teaching was not justified in basing its generalizations upon the results of one so-called "typical" college since the results were not tested according to the criterion. Several writers, who used the results of the Carnegie Foundation for the Advancement of Teaching, were even less careful in drawing their conclusions from the results of the "typical" college. This study seems to suggest that great care should be exercised in drawing conclusions from data that have not been proved statistically valid. If the statistical criteria are not valid, then they should be discarded.

4. The reports of the Carnegie Foundation for the Advancement of Teaching do not consider the form of the learning curve or the curve for the rate of learning in discussing the findings or in drawing conclusions. The experimental literature which was cited in the present study showed that the curves for capacity, learning, or rate of learning were negatively accelerated. If negative acceleration also held for the performance of the students employed in this study, then the increase in performance in 1932 would be greater than the performance in 1930 but would not be as great as if there was a linear relationship. That is, on the basis of the

experimental literature, an increase would be expected between the ages of eighteen and twenty-two but negative acceleration would be present. In order to test this assumption, curves for the straight-line function and the logarithmic function were fitted to data which were published by the Carnegie Foundation for the Advancement of Teaching for high school seniors, college sophomores, and college seniors. The Chi-Square value for the straight-line function was .1057 and for the logarithmic function was 0.788. It would appear that the logarithmic function gives a better fit than does the straight-line function so that the assumption of negative acceleration is justified.

5. The tests which were constructed by the Carnegie Foundation for the Advancement of Teaching should have been validated before they were used for survey purposes. The percentile curves show that there is much to be desired from the standpoint of the discriminative function of the tests.

6. If the correlations of the tests with college grades are accepted as one means of test validation, then the tests appear to possess some degree of validity from a statistical point of view.

7. There is an increase in the variability of the capacity and the performance of the students as they continue in college. Additional training does not appear to make students more homogeneous but rather more heterogeneous.

8. From the standpoint of prediction of success, it would appear that approximately one-half of the cases are correctly predicted by both the test scores and the college grades. But when variations greater than one P.E. of the estimate are considered, test scores tend to over-predict grades and grades tend to under-predict test scores. Since this is the case, the conclusion could hardly be made that students work entirely for grades without gaining in achievement.

9. Where disparities occur, careful analyses should be made in order to perfect both the tests and the college grades.

—Volume 13, Number 1

ITALIAN EDUCATION UNDER THE FASCIST STATE

ATTILIO G. PARISI

TO PRESENT an exposition of the educational philosophy and system of a nation without even a summary review of its history is an unfair treatment, excusable only upon the ground of limited space allotment. In the education of a people are reflected its mores, military destinies, and commercial fortunes. This has been true since the day of the celebrated Spartan and Athenian systems of education down to the most recently instituted systems under the present-day dictatorships.

Italy is no exception to this. Her system of education reflects the current political and economic thought. All of Italy's energies in every field are being marshaled to achieve the goal pointed out to her by Il Duce—The Reclamation of the Glory that was Rome's. And so, "Italy is marching on to her Destiny" with her educational system as the first beleaguer, the commissary, feeding the spirit required in the herculean task.

Italians have always recognized the power of education in molding public opinion. As early as 1809 Vincenzo Cuoco, in his report to Murat at Naples, pointed out that,

> Without education the best laws remain useless. These laws may be written down, but only education can imprint them in the hearts of the citizens. Only education can restore to us our ancient greatness and our ancient glory.[1]

These words could well have been uttered by Benito Mussolini, Giovanni Gentile, or any other Fascist leader. At any rate, one of Il Duce's first acts was to set in motion an educational system which would achieve this same restoration. He appointed the eminent philosopher and educator, Gentile, as the first Fascist

[1] Quoted in Little, C. E. "Italians and Their Schools." *Peabody Journal of Education,* September 1932, vol. 10, p. 132.

Minister of National Education with absolute power to devise the desired educational scheme.

Unhampered by any interference from Parliament or other political body, he accomplished his task in twenty-three months and resigned to return to his first love, teaching. His plan soon came to be known as the Gentile Reform.

It was not a violent, drastic, revolutionary change from the existing order, but rather, an intangible, quiet yet forceful modification of conditions. The Reform had two aspects: one, the reorganization of the administration, support, and procedures, and the other, the infusion of a new spirit by the definition of new objectives.

At this point it is well to consider what Italian education was like prior to the advent of Fascism.

The long struggle against illiteracy with its series of compulsory education laws produced a peculiar condition in Italy. Everyone went to school and tried to get the certificate of completion because it was "the thing to do." Schools degenerated into diploma factories and Italian education became a devitalized, dehumanized, mechanical process. Examinations became memory tests; preparation was by means of condensed manuals filled with encyclopedic information.

Even before the advent of Fascism, Gentile decried this deplorable state of affairs. Together with Benedetto Croce, he denounced the educational leaders and tried "to shake Italy out of the doze of naturalism and positivism back to idealistic philosophy."[2]

Because the Fascist State is essentially nationalistic and because the school is a creature of the State, Nationalism became the ultimate objective of the school. The reduction of illiteracy, the elimination of sectionalism, and the glorification of Italy's past grandeur and of her present Fascist regime became the proximate aims. The old materialistic, encyclopedic education was discarded in favor of a liberal and cultural education.

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[2] Croce, B. "Introduction" to Gentile, G. *Reform of Education.* Harcourt, Brace, and Co. New York. 1927. p. vii.

CONTROL

All schools were placed under the jurisdiction of a centralized office, significantly called "Minerva." But this has developed into a sort of decentralized centralization. This paradox is explained by the fact that duties have been delegated to local autonomy wherever possible with authority vested in the Minister of National Education. Incidentally, his title was changed from that of Minister of Public Instruction in order to conform with the nationalistic spirit of the Reform.

He enjoys powers of unusual scope. Article 4 of the Royal Decree No. 1735, dated July 16, 1923, provides as follows:

> The Minister governs and promotes public instruction and national education; supervises the private schools under the care of the state institutions; is responsible for public order, morality, and culture; encourages the study of the fine arts; and has charge of the artistic treasures of the nation.
>
> He has firm control of the administrative relations between his subordinates; he decides disputes which arise between them and amends or annuls their actions in so far as these are not in harmony with laws and regulations. He has final pronouncement on appeals.[3]

To assist him, a Central Administration was set up. It consists of an Under-Secretary and the advisory boards, known as, (a) The Superior Council and the Superior Council Board of Public Instruction; (b) The Central Commission and the Central Commission Board for the Antiquities and the Fine Arts; (c) The Commission on appeals of elementary teachers and the disciplinary charges against them (First Commission); and, (d) The Commission on appeals of secondary teachers and the disciplinary charges against them (Second Commission).

For administrative purposes, the nation was divided into nineteen educational districts, each one under a supervisor, who is the virtual local business and administrative agent of the Minister by whom he is appointed. In non-autonomous areas he governs the schools, while in autonomous districts, he acts in a supervisory capacity.

[3] Published in Marraro, H. *Nationalism in Italian Education.* Italian Digest and News Service. New York. 1927. p. 99.

Local administration is encouraged wherever possible in order to avoid the inflexibility which comes of bureaucratic organization. It is felt that this decentralization of duties increases the facility with which peculiar local conditions may be coped. The inspectorial system insures compliance with national laws and policies.

SUPPORT

The sources of revenue for elementary schools are either the State, province, municipality, educational association, or private initiative. Secondary schools charge fees varying from twenty-five to two hundred lire per year, while schools of university grade charge considerably higher fees.

For the purposes of support and allocation of funds, the schools have been divided into "classified" and "unclassified." The former are maintained by the State or municipality possessing educational autonomy, while the latter are supported by educational associations and administered by an Illiteracy Commission. These schools are subdivided into "temporary" and "subsidized." Temporary schools must be established wherever there are forty children of school age, and must be kept open as long as there are at least fifteen pupils in attendance. Subsidized schools are provided for localities where, because of peculiar conditions, not more than fifteen pupils can attend. They are administered by private individuals and are subsidized by the State. They are usually located in parishes, industrial, or agricultural establishments.

All these schools are authorized by and come under the scrutiny of the educational supervisor, who, it must be remembered, is appointed by and responsible to the Minister of National Education. In this way, party control is maintained over all classes of schools. Institutions, teachers, or principals failing to conform with the laws or policies of the state are reprimanded, censured, or deprived of compensation.

At the university level, the Fascist Party endeavored to reduce the number of institutions by classifying them according to two categories, "A" and "B." The former includes ten universities which are entirely supported by the central government, while the

latter consists of eleven universities which receive only partial state support, ranging from 1,000,000 to 2,400,000 lire per year.

In addition, the State entirely maintains six "Class A" engineering schools, one higher school of architecture, and three higher normal schools and furnishes annual contributions to several "Class B" specialized schools at the university level.

While the universities have been granted powers so that they are now practically autonomous, party adherence is insured by the requirement of the oath of allegiance demanded of all instructors.

PURPOSE

The purpose of Italian education is to develop a national consciousness. This aim runs through the whole educational system; it permeates both the primary and auxiliary agencies of education.

Gentile's philosophy demands that the child be encouraged toward a greater creative development. He must acquire a cultural knowledge rather than a factual, encyclopedic reservoir; he must eliminate illiteracy and improve the intellectual standard of society to the end that his country, his Italy, will achieve the cultural leadership that rightfully belongs to her.

More specifically, the purposes of Italian education vary with the educational level. Practical skills at the elementary level, cultural maturity at the secondary level, and professional specialization at the university level constitute the specific aims.

SCOPE

Education in the Fascist State is conducted through the medium of primary and auxiliary educative agencies. The former includes the school system, involving pre-school and adult education, as well as the customary school education; the latter includes leisure organizations of a social or athletic nature, the theater, reading matter, radio, and community organizations.

The battle against illiteracy was inaugurated by the Royal Decree of December 31, 1923, which required the compulsory attendance of every child from six to fourteen years of age at day or evening schools. Punitive provisions made this law effective where its predecessors had failed.

Kindergartens, for the first time, were made an integral part of the elementary school, and the elementary school was made available to everyone. In conformity with modern educational thought in Italy, however, secondary and higher education were restricted to qualified students.

Fascism, it should be pointed out here, negates the democratic principle of unlimited education for all. It adheres to the principle of selection. Recognizing individual differences, it maintains that only those who have the capacity and *are willing to study* are entitled to admission to the secondary schools and higher institutions. Admission can be gained only through rigid State examinations which do not test for factual knowledge but for appreciations, understandings, philosophical and scientific reasoning, and creative ability.

Accordingly, secondary schools are divided into three major types:

1. Schools which prepare for certain professions (technical institute) and for teaching in the elementary schools (normal institute);

2. Schools which prepare for higher institutions (lycée—gymnasium, scientific lycée). The lycée for girls offers a course in general culture for girls who do not wish to enter upon higher studies.

3. Schools which complete the instruction of the elementary school (complementary).[4]

Theoretically, the third type is the school of the masses. It is where specific skills in the practical arts are taught. But, as a matter of fact, the Italian Government is concerned because it is the school of the few. Too many people, anxious to escape the opprobrium of inferior specialization, are flocking to the schools in the other two categories. To cope with this "destructive compromise" pointed out by Bottai, the present Minister of National Education, it is suggested that the lower middle institutes be unified.[5]

[4] Menna, E. "The Gentile Reforms in Italian Education." *Educational Administration and Supervision,* October 1936. vol. 22, p. 551.

[5] Bottachiari, R. "I Problemi Della Scuola." *Nuova Antologia,* April 1, 1937. vol. 38, p. 347.

At the present time the school which is attracting the greatest number is a strictly cultural school. According to James F. Abel, Chief of the Division of Comparative Education in the United States Office of Education,

> The curriculum which leads to the diploma (of classical maturity) is planned for eight years of study divided in two periods; five years in a *ginnasio,* followed by three in a *liceo.* Admission to the *ginnasio* is by examination taken by the child usually after he has been four or five years in a primary school and is about ten years of age. Normally a graduate of a *liceo* is eighteen or nineteen years old. The programs of the *ginnasio* and liceo as fixed by Royal Decree of May 7, 1936, No. 762, are given in the accompanying graph. . . . The school year is ten and a half months, from September 1 to June 15. A class-hour is normally sixty minutes.[6]

In the *liceo* course of Italian, Dante, Petrarch, Machiavelli, and Manzoni are studied together with the history of literature and the history of music. The Latin course for the same period includes Virgil, Livy, Horace, Tacitus, and Cicero together with the history of Latin literature. Algebra, geometry, and trigonometry are combined courses, geometry being started with arithmetic in the first three years of the *ginnasio* and then combined with algebra in the last five years. In the group of courses listed as Chemistry, Natural Sciences, and Geography, the *liceo* requires botany, zoology, human anatomy and physiology, and hygiene in the first year; vegetable anatomy and physiology, chemistry, mineralogy in the second; and physical and anthropological geography and geology in the third. The history is preponderantly Roman and Italian with "other countries brought in only as they have a bearing on the history of Italy." In philosophy "no fewer than three dozen authors covering the centuries from Plato to Gentile" are studied; while the History of Art "begins with the Greek and Etruscan and comes through to the eighteenth century."[7]

It must be remembered that this cultural education is preceded by the elementary curriculum which emphasizes art, religion, sing-

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[6] Abel, James F. "Educationally—Where Is He?" *School Life,* January 1937. vol. 22, p. 151.

[7] *Ibid.*

SUBJECTS OF STUDY	GINNASIO 5 years					LICEO 3 years		
	I	II	III	IV	V	I	II	III
Religion	1	1	1	1	1	1	1	1
Italian	7	6	6	5	5	4	4	3
Latin	7	7	7	5	5	4	4	3
Greek				4	4	4	3	3
A Modern Language		3	4	4	4			
History and Geography	4	5	4	3	3			
Mathematics	2	2	2	2	2	3	2	2
History						3	3	3
Philosophy and Elements of Law and Economics						3	3	3
Physics							2	3
Chemistry, Natural Sciences and Geography						4	3	2
History of Art						1	1	2
Physical Education	2	2	2	2	2	2	2	2
Total Hours a Week	23	26	26	26	26	29	28	27

THE PROGRAMS OF THE GINNASIO AND THE LICEO

Fixed by Royal Decree No. 762, May 7, 1936 [1].

1. Abel, op. cit.

ing, and music in general in the expectation that the child will learn to appreciate the beautiful and to express himself accordingly. The three R's, which formerly enjoyed such prominence, are now relegated to the secondary position of tool objects, even such practical subjects as gardening, domestic science, and manual training receiving greater emphasis.

Throughout the whole educational course from the elementary to the highest levels, the Italian language receives greatest emphasis. This is necessitated by the great number and diversity of dialects which have prevented the complete unification in fact of Italy. The inability to converse with each other freely has led to the development of a dangerous sectionalism which is being broken down by the acquisition of the common language.

Since the Royal Decree of December 31, 1934, a course in military culture is also made compulsory at all levels. This course begins with a study of the army, its branches and functions; continues with map reading, navy, aviation, historic examples; and ends with a study of war, its relation to the political, social, and economic life of the country, how it begins, is carried on, and terminated, demobilization, colonies, and kindred subjects. The entire course at each level is supplemented by open-air exercises, excursions, trips to forts, naval bases, air fields, and military museums.[8]

The chief concern of the Minister of National Education is, aside from the unwarranted over-crowding of the classical school, to keep the school from becoming too abstract. But to him the school is abstract "which, while the country needs engineers, turns out lawyers; while the country needs jurists, produces orators; while it needs men equipped for and adjusted to the modern life, remains organized according to the scheme of a false humanism."[9] In short, the problem is one of guidance aimed to decrease the discrepancy between the needs of the country and the products of the school. The formula which is being constantly striven for is: greatest selection, greatest production. Those who cannot be leaders

[8] Schnapper, M. B. "Militarization in the Fascist School." *School and Society,* January 18, 1936. vol. 43, p. 97.

[9] Bottachiari, *op. cit.*

must be directed wherever best fitted. The whole school function must be conscious of the national reality which is: industry, commerce, agriculture, and definite work. The Corporative State demands that the school begin the corporative training.

Realizing that the schools are only a part of the process of education, the Fascists, from the very start, focused their attention upon all the other forces influencing the people. To supplement the Gentile Reform in the schools, they launched an elaborate program involving all auxiliary educative agencies.

The principal organization for the young people is the *Opera Nazionale Ballila,* a national organization of dual personality, which aims to inculcate in the young minds the proper spirit of national pride and to develop a future citizenry of strong, healthy bodies. Under the general control of the Minister of National Education, it carries on an "in school" and "out-of-school" program. The "in school" program is concerned with the organization and administration of physical education, a phase which is being given great emphasis by the Fascists. The "out-of-school" program is complex and wide in scope.

Basically militaristic, it is controlled entirely by the Fascist Party. Its uniform is very similar to those of the national militia, some of whose junior officers are used as commanders of the boys' units. Open to both boys and girls from eight to eighteen years of age, it provides avocational activities, sports, excursions, occupational education, a nautical school, rates on all travel and study expenses, free medical examinations and treatment, summer camps, and insurance.

To provide a somewhat similar organization for adults the *Opera Nazionale Dopolavoro* was created. It "promotes schemes for the better employment of the free time of workers of all classes, with the object of raising their intellectual, moral, physical, and social status in accordance with the policy of enhancing national values promoted by Fascism."[10]

Its program is divided into four main sections:

[10] Sillani, T., ed. *What Is Fascism and Why?* Ernest Benn, Ltd., London, 1931. p. 210.

1. Instruction—culture for the people and the teaching of trades;
2. Artistic education—dramatic societies, music, chorus singing, cinematography, wireless, folklore;
3. Physical education—Italian Excursion Federation and Central Sporting Commission;
4. Social welfare and hygiene—dwellings, hygiene, provisions for the future, leisure occupations for the various classes of workmen.[11]

There are several other organizations and enterprises which could be mentioned. Although they all have a definite bearing upon the Fascist educational system, further discussion is precluded by the limitation of space. Suffice it to say that it is through these agencies that the Fascist Party attracts and develops strong supporters.

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[11] *Ibid.*, p. 211.

SOME AVERAGES OF ANTHROPOMETRICAL MEASUREMENTS OF FRESHMAN MEN

JAMES G. WILSON

THIS study reports some averages of the anthropometrical measurements of the University of Kansas freshman men whose ages range from sixteen to twenty-one years and who have been examined by the Department of Physical Education between the years of 1903 and 1932.

Something over seven thousand individuals are included in the examinations reported. Perhaps comparisons made in the future with these data as a basis will show that they are a representative group, and typically "Kansas Youth," when considered as a whole.

For the purpose of the study, however, they are simply a group of University freshmen, which, as such, may be compared to similar groups in other institutions. It can be found how, and in what ways, they excel and are excelled by others from a physical measurement standpoint.

The physical measurements from which the averages found in this study were taken, have been accumulated since 1903. The method used in measurement has been uniform and under the direct supervision of one man, Professor Maismith. This point seems important to the writer, in that, the measurements have been uniformly and carefully taken. During the years 1920-23 the writer assisted in the physical examinations, and can testify concerning the care and minute directions followed, both in the actual measurements, and the recording and filing of the data.

The case cards used to record the anthropometrical measurements were filed in such a manner that they were easily accessible. These cards were generally used to record more than a single examination. Interesting comparisons are found in the changes and developments which occurred in the individual during a two-semester course in physical training. Because of the factors other

than development, such as normal growth, gain in weight, and similar changes, this study does not concern itself with all the changes in the individual which might be studied from the data recorded.

Another aim of this study is to substitute the averages obtained for the norms used in the percentile charts now in use in the Department of Physical Education. From the comparison of the group studied with similar studies in other institutions, namely, Amherst, Cornell, Wisconsin, Yale, and Washington and Jefferson, there are some differences.

HOW THE MEASUREMENTS USED IN THIS STUDY WERE TAKEN

The method of taking the physical measurements which are described in this study is very similar to that used in other colleges and universities. This method may be attributed primarily to three men, Seaver of Yale, Hitchcock of Amherst, and Sargent of Harvard.

The influence of these three men has done much toward arriving at a uniform system of taking the anthropometrical measurements in physical education classes. Only the major physical features and characteristics which can be measured readily and accurately are considered here. These are height, weight, girth, breadth, depth, and length of the individual, characteristics which can show change and development quantitatively.

The following data were used in order to obtain uniform results.

Age—The age used was that of the student's last birthday.

Height—The height was measured with a stadiometer, which was calibrated into feet, inches, and tenths of inches. The student stood with the body easily erect, heels together; heels, buttocks, and the spine between the shoulders were in contact with the rod. This measurement and those to follow were taken with clothing removed.

Weight—The scales used were the type with high standard, small platform, and double beam, having a capacity of four hundred pounds.

Chest (breadth)—The shoulder calipers were used to measure the chest. The student assumed a normal position with the chest neither contracted nor expanded.

Waist (breadth)—The shoulder calipers were used to measure the waist at the narrowest point.

Hips (breadth)—The shoulder calipers were used to measure the hips at the broadest part over the trochanters; feet together, with weight resting equally on both.

Head (depth)—The shoulder calipers were used to measure the head from a point midway between the eyebrows to include the longest part.

Chest (depth)—The shoulder calipers were used to measure the depth of the chest. One prong of the calipers was placed on the sternum, the other on the spine; respiration was normal, with chest neither contracted nor expanded.

Neck (girth)—A tape line was passed just beneath the larynx, parallel with the floor. The measurement was read to the nearest tenth of an inch. The individual stood erectly.

Chest (girth)—The tape line was used to embrace the scapulae. The student stood erectly with chest normal.

Waist (girth)—The tape line was passed just above the illiac bones, which is the smallest part of the waist after a natural expiration.

Head (breadth)—The shoulder calipers were used to measure the head at the widest part, just above the ears.

Shoulders (breadth)—The shoulder calipers were used to measure the widest part of the shoulders, including the deltoid muscles, with the individual standing in a normal position, shoulders thrown neither backward nor forward.

Abdomen (depth)—The shoulder calipers were used, placed with one prong immediately above the navel, the other on the spine at such a point that the line of measurement was at right angles with the axis of the spinal column.

Trunk (length)—The shoulder calipers were used to measure the distance from the supersternal notch to the superpubic notch, with body erect.

Femur (length)—The shoulder calipers were used to measure the distance from the top of the great trochanter to the tuberosity of the fibula.

Tibia (length)—The shoulder calipers were used to measure the distance from the tuberosity of the fibula to the bottom of the malleolus.

A comparison of the physical measurements of the six age groups of University of Kansas freshman men is interesting because of the similarity rather than any extreme range.

The height of the six age groups does not change according to age. The maximum range exists between the 16 year old group and the 21 year old group. This range, less than one-half inch, is extremely small. Roberts, in his study of 30,000 men, ages 16 to 21, in England, found the range to be 3.32 inches. Hall, in his study

of 2,234 men in the state of Pennsylvania, found the range to be 1.20 inches.

This extremely small range in height between the University of Kansas freshman men would seem to show that the 16 year old freshman is tall for his chronological age.

The weight of the various groups likewise shows a small range (7.09 pounds), an average of 1.42 pounds increment per year. The increment per year among the groups is quite regular. The increment in weight for each group for the years 16 to 17 is 1.28 pounds; from 17 to 18, 1.104 pounds; from 18 to 19, 2.280 pounds; from 19 to 20, 1.626 pounds; and from 20 to 21, .80 pounds.

The three girth measurements, neck, chest, and waist, show small positive increases as the age advances. The maximum range in girth of the neck is .6 inches, the girth of the chest, 1.34 inches, and the girth of the waist is 1.05 inches. In each case the 16 year old group is the minimum and the 21 year old group is the maximum.

The breadth of the head does not show positive increase since that of the 17 year old group is .01 inches greater than the 18 year old group. The shoulder breadth data shows small positive increase as the age advances. The maximum range for shoulder breadth is .64 inches or .106 inches per year.

The breadth of the chest shows the 17 year old group exceeding the 18 year old group by .05 inches. The maximum range is .42 inches or .07 inch per year. The breadth of the waist shows the most extraordinary feature of the entire table. The breadth of the waist of the 16 year old group exceeds the 21 year old group by .49 inches. The other groups vary rather consistently, the breadth increasing in each case as the age advances. The breadth of the hips shows a maximum range of .46 inches or .076 inches per year.

The depth measurements of the head, chest, and abdomen show some unusual features. The chest and abdomen of the 16 year old group exceed those of the 17 year old group. The depth of the head of the 18 year old group exceeds the 19 year old group but the difference is small.

The three length measurements, trunk, femur, and tibia, show some features which should be explained. The length of the trunk,

which some consider an indication of vital capacity, shows rather consistent increase as age advances. The length of the femur is not consistent with the increase in age since that of the 16 year old group exceeds all but the 21 year old group. The length of the tibia is likewise inconsistent, that of the 17 year old group exceeding the others by a small margin.

The measurements seem to show that the 16 and 17 year old groups are above the norm as to entrance age, as determined by this study, and compare on the whole, quite equally with the physical measurements of the older groups.

TABLE I

AVERAGE HEIGHT, WEIGHT, BREADTH, DEPTH, AND LENGTH OF FRESHMAN MEN, AGES 16 TO 21 INCLUSIVE, AT THE UNIVERSITY OF KANSAS DURING THE YEARS OF 1903 TO 1932

	16	17	18	19	20	21	All Ages
Height	68.000	68.453	68.410	68.260	68.430	68.486	68.381
Weight	134.570	135.850	136.954	139.234	140.860	141.660	138.517
				Girth			
Neck	13.35	13.59	13.71	13.83	13.93	13.95	13.769
Chest	32.19	32.65	32.79	33.18	33.36	33.53	33.033
Waist	28.47	28.50	28.72	29.10	29.36	29.52	29.006
				Breadth			
Head	6.06	6.08	6.07	6.08	6.09	6.09	6.087
Shoulders	15.64	15.91	16.05	16.16	16.25	16.28	16.126
Chest	10.54	10.81	10.72	10.82	10.88	10.96	10.809
Waist	10.78	10.10	10.14	10.21	10.24	10.29	10.197
Hips	12.35	12.52	12.61	12.71	12.72	12.81	12.666
				Depth			
Head	7.71	7.71	7.76	7.81	7.78	7.73	7.744
Chest	7.51	7.48	7.56	7.62	7.68	7.70	7.328
Abdomen	7.30	7.24	7.27	7.35	7.40	7.43	7.328
				Length			
Trunk	21.40	21.46	21.60	21.66	21.73	21.78	21.624
Femur	18.55	18.51	18.53	18.54	18.52	18.58	18.536
Tibia	14.57	14.66	14.63	14.56	14.60	14.60	14.602
No. cases	119	827	2266	2001	1316	873	7402

Table II indicates that the average age of University of Kansas freshman men in this study is 1.96 years younger than the average of Amherst students examined, 1.26 years younger than those in the Wisconsin study, and 1.56 years younger than those in the Yale study.

The University of Kansas freshman men are taller but the difference is relatively small. The maximum range is .51 inches and is found between University of Kansas freshman men and Yale students. The minimum range in height is .27 inches; University of Kansas freshman men exceed Washington and Jefferson students by that amount.

The weight of the University of Kansas freshman men shows them to be exceeded by the students of Wisconsin, Washington and Jefferson, and Yale in that order. The weight of Amherst and Cornell students is less than that of the University of Kansas freshman men by 3.88 pounds.

TABLE II

COMPARISONS BETWEEN STUDENTS ENROLLED IN THE GYMNASIUM CLASSES AT THE UNIVERSITY OF KANSAS AND FIVE OTHER UNIVERSITIES

	Kansas	Amherst	Cornell	Wisconsin	Yale	Wash. and Jefferson
Av. age	18.84	20.80	—	20.10	20.30	—
Height	68.38	67.91	67.91	67.95	67.87	68.11
Weight	138.52	134.64	134.64	139.26	137.60	138.82
			Girth			
Neck	13.80	13.89	13.74	14.05	13.78	13.62
Chest	33.03	—	—	33.03	33.30	33.30
Waist	29.01	28.64	28.58	28.78	28.54	28.31
			Breadth			
Head	6.09	6.10	6.06	6.14	6.10	—
Shoulders	16.13	16.92	17.09	17.13	16.14	16.14
Chest	10.81	—	—	10.98	10.75	10.63
Waist	10.20	10.00	9.92	9.88	9.96	—
Hip	12.67	12.72	12.72	12.80	12.72	12.56
			Depth			
Chest	7.60	—	—	7.36	7.32	7.24
Abdomen	7.33	—	—	7.12	7.17	—

The girth of chest for students of Yale and Washington and Jefferson exceeds that of University of Kansas freshman men by .27 inches. The girth of waist figures rank the Kansans first.

SUMMARY

The University of Kansas freshman men of all ages are 1.96 years younger than the students of Amherst, 1.56 years younger than Yale students, and 1.26 years younger than those in the Wisconsin study.

The average height (68.381 inches) of University of Kansas freshman men for all ages exceeds that of the five other Universities studied. They are .51 inches taller than Yale students and .26 inches taller than Washington and Jefferson students (Table II).

The modal height (68.381 inches) of University of Kansas freshman men has 1,242 cases occurring at that interval.

The average height (68.381) of University of Kansas freshman men, ages 16 to 21 inclusive, exceeds the average height (67.49 inches) of 868,445 World War recruits by .891 inches.

The average height (68.381 inches) of University of Kansas freshman men, ages 16 to 21 inclusive exceeds the average height (67.30 inches) of 501,058 men of 24 nativities by 1.080 inches.

The 119 sixteen-year old University of Kansas freshman men are exceptionally tall for their ages. They are 5.07 inches taller than the English Artisan Class of the same age. They are 1.5 inches taller than the 16 year old men of Pennsylvania.

The weight (138.52 pounds) of the 7,402 University of Kansas freshman men ranks them fourth in the study of five other University groups.

The weight (138.52 pounds) of the 7,402 University of Kansas freshman men is 3.02 pounds under the average weight (141.54 pounds) of 868,445 World War recruits.

The girth of the chest (33.03 inches) of the University of Kansas freshman men shows them to be below the averages of a majority of the other studies. Yale and Washington and Jefferson students exceed them by .27 inches.

The average chest girth (33.53 inches) of 501,058 men of 24 nativities exceeds the average girth of chest of the University of Kansas freshman men by .497 inches.

The University of Kansas freshman men are above average in height, about average in weight and below average in girth of chest.

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THE COLLEGE PRESIDENT LOOKS AT THE REGISTRAR

GUY E. SNAVELY

THE college registrar should have a capacity for infinite patience. The necessity for his co-operation and daily work with students, faculty and public means that he will have to expect severe trials of patience and forbearance. In these relationships his duties resemble those of the college president and dean. The average faculty member does not have so many contacts and very seldom is required to meet the difficult problems that daily face administrative officers.

Another absolute quality required of a registrar is that of precision. He must be unusually careful in his statements and in the maintenance of records. Slight misunderstandings may cause tremendous confusion in the plans of the student. A mistake in recording may cause a student to spend an unnecessary semester or summer quarter in order to complete graduation requirements.

A few years ago the registrar of a certain institution obtained a leave of absence. His substitute, an unusually keen and well-trained person, made a mistake in computation that permitted a candidate for a degree to graduate with a shortage of one semester hour. Upon the return of the regular registrar the following year, this error was discovered. Of course, it was too late for any action to be taken. It was necessary to make the best of the situation and offer a prayer that the alumnus in question would not at some future time ask for a transcript of credits for admission to some graduate school. Doubtless the alumnus in question will never know of the error and thus have no inferiority complex about graduating without meeting all the requirements in full.

Cheerfulness is another quality that the ideal registrar should possess. Students, especially the new ones, undertake the terrifying maze of filling out cards and answering multitudinous questions

with considerable trepidation. A pleasant countenance behind the bars of the registrar's window helps the wondering student to forget his or her timidity.

A cheerful registrar can frequently make the complaining and disgruntled student forget his complaint against a teacher or other officer. Such a registrar can usually persuade the student that hard courses are really easy if undertaken with the right attitude. He can also convince the student about the merits of certain courses he would like to dodge for other reasons.

It is not necessary, but it strikes me as preferable for the registrar to have done graduate work. In fact, I believe the ideal registrar should be a teaching member of the faculty. I think that he, as well as the dean and president, should teach at least one class. By doing so, he is in far better shape to understand and appreciate the problems of his colleagues in the faculty.

The good registrar should not only keep up his teaching but should continually be making studies that will be of interest to the faculty and the administration with regard to student problems. It goes without saying that he must have expert and reliable clerical assistants if he is to maintain these functions. He should be able to delegate routine work like recording grades, sending out reports, and making up class lists.

To be sure, in large universities the registrar by necessity becomes a much more impersonal officer in his relationships with students than the collegiate registrar I have been discussing. A few days ago I observed the registration at Columbia University where nearly twelve thousand summer school students were enrolled in three days. Trained clerical assistants received these students in a steady stream that was distributed through some eight lanes. Quite naturally, the student never saw the registrar and probably does not even know his name.

Some college presidents, and even university presidents, of my acquaintance have the reputation of knowing by name all their students after meeting them once. I know from experience that frequently too much credit is given the president in this particular. However, by practice, determination, and a certain innate capacity, this faculty can be developed. The registrar, more particularly in

the smaller college, should certainly know each student by name or at least have them think that such is the case. The fact that the registrar of my own university always knew me by name still abides pleasantly in my memory.

If the registrar can command the time by delegation of details to continue as an authority in his chosen academic field, he certainly should be in line for promotion to a deanship or to a presidency. It seems to be such a difficult problem to find suitable persons for college presidencies. I cannot see why the road to such an important, though arduous task, would not be through the offices of the dean and registrar. In this connection, it occurs to me that encouragement might be given tactfully to younger members of the faculty or even to senior students to act as volunteers in the registrar's office. The student or young instructor in question could readily discover whether he had the aptitude to enter the field of college administration. The field is certainly wide open for worthy and capable candidates. I can foresee that there might be some tendency to impose on the volunteer as well as the possibility of burdensome work on the part of the registrar in giving instruction and directions to an untrained person.

During my first ten years of college teaching, I was for eight years the college registrar. I had an excellent assistant who relieved me of practically all the clerical details. I was able to keep up my work in my chosen field of Romance languages by writing articles and editing textbooks. After the two years' interruption of war service, I had short experience as dean and financial agent, where I was able to teach only a small class in Spanish. During my past sixteen years as president of a college of nearly two thousand students, I have taught regularly a class in the history of art.

From experience and observation, I feel deeply that the registrar should have some small time for teaching.

Finally, and more positively, I feel that the registrar should be equipped with that indefinable quality known as personality. After all, the main feature of personality is a willingness to serve one's fellows. The registrar certainly has unlimited opportunity in this direction.

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EDITORIAL COMMENT

Recruit or Restrict?

The proposed code of ethics in recruiting students which has been presented to the North Central Association and which is reprinted in this number of the JOURNAL draws attention to some problems of deep significance to American higher education. The unethical practices which have been followed during the lean years by some institutions are only symptoms of a deeper ailment. In 1932 colleges had become accustomed to living within a certain income. When that income was diminished, faculties became restive. To reduce salaries which were then just approaching a respectable scale, and to dismiss faculty members when staffs were even then none too large, seemed not to be wise economy.

What could the small college do? If it was located in an isolated town it lost those students who normally would prefer the small college but who, for economic reasons, attended an institution near home. In order to maintain its enrolment, pay its staff and thereby keep intact an educational program with which to attract students, it set out to get more students. It sought its share of those whom economic conditions guided elsewhere. If it was successful in enrolling them it made a desperate effort to hold them. The result was a recruiting practice to get students and a lowering of standards to keep students.

While the small private college was being distressed by a loss of income from depleted enrolment, it was also suffering from a greatly diminishing income from its endowment. The municipal and state universities were, on the other hand, blessed by location and position. Such institutions are generally located in more populous centers and, because of low fees, can attract many students who would, during normal times, attend private institutions.

But the pursuit of unethical practices to induce young people, qualified and unqualified, to enter college in spite of discouraging annual reports by college placement and employment offices, should awaken college administrators to the deeper problems. The

rapidly rising registration figures in higher institutions all over the world and the tendency in foreign countries toward a *numerus clausus* should lead us to a consideration of the surplus problem among college trained men. The following figures indicate the increase in enrolment in some countries during the period from 1913 to 1934:

Japan increased 636 per cent.
Roumania increased 570 per cent.
British India increased 290 per cent.
France increased 112 per cent.
Holland increased 145 per cent.
Great Britain increased 82 per cent.
United States increased ±200 per cent.

After studying this problem thoroughly, Walter M. Kotsching[1] concludes that ". . . in so far as the planless expansion of higher education is leading to a lowering of standards in colleges and universities, to more unemployment of the highly educated, and for that reason not only to social unrest but to a surrender of intellectual values and a denial of the intellect, ways and means have to be found to save education from itself, to give purpose and direction to the evolution of higher learning."

Will we go blindly on, encouraged by the false confidence we place in large registration figures, and discover too late that we have over-populated and devitalized not only our colleges but business and professional ranks as well?

This problem is accompanied by that of the extent to which private colleges will be able to finance, in a measure comparable to publicly supported institutions, adequate programs in higher education. In a report to the General Education Board, Trevor Arnett said that it seems that the privately endowed colleges and universities are confronted with this situation:

a. A diminishing return on endowment funds;
b. Increasing competition from the publicly supported colleges and universities;

[1] Walter M. Kotsching, "Limiting Student Enrollments," *The Educational Record,* Vol. 18 (July, 1937), pp. 354-367.

c. The possibility of a shrinkage in gifts and bequests, especially from large donors as a result of new tax legislation; and
d. The need of larger salaries to retain and attract able faculties.

These are grave problems which must be satisfactorily solved if the endowed institution is to continue as an important factor in higher education. The opinion is generally held that the endowed university and the endowed college have a distinct mission in our educational system—to emphasize quality as contrasted with quantity in education; to take the initiative in educational methods and experiments; to preserve freedom of speech, teaching, and investigation; and to prevent higher education from falling entirely into the hands of states and municipalities.

Fundamental questions derived from such statistical studies as the present are:

How shall these problems be solved so that these institutions may continue to fulfill their mission?

Must greater dependence be put upon student fees and, if so, is that possible without a revision of their basis?

Shall efforts be made to obtain gifts on a broader scale?

Shall greater reliance be placed upon public support for higher education and the advancement of knowledge?

Must expenses in privately endowed institutions be curtailed and, if so, shall the reduction be in research and investigation or in other advantages that students now receive?

That these are questions of deep significance is obvious. They relate, in part at least, to the whole philosophy of education in this country. Upon their answer much depends that pertains to the rôle and the machinery of higher education in the United States.[2]

No one can condone the unethical procedures which have been practiced by some institutions in their efforts to maintain enrolments. But does not this problem of recruiting suggest a need for studying the ratio between the number of students necessary for the adequate functioning of all existing colleges and the demand for the services of the graduates from these colleges? Maybe it is as much a question of restricting as it is of recruiting.

[2] Trevor Arnett, *Observations on the Financial Condition of Colleges and Universities in the United States.* General Education Board, New York City, 1937.

What Shall We Do With Questionnaires?

How shall we distinguish between research and pseudo-research? Probably those who will differ most in the answer to this question are those who have compiled long sheets of data from elaborately filled out questionnaires, and those who know the limitations of questionnaires as aids to true research. Doubtless, a questionnaire, so organized that the information received will be valid and reliable, can provide valuable data. But frequently the type of information solicited betrays the weaknesses of the researcher. The following letter, forwarded to the Editor, was received by the registrar of a western institution:

"This letter is written to request your assistance in an investigation in the field of English which is being made under the sponsorship of the ..... College of Education. The study aims to assist in improving standards in English in schools throughout the country. To this end I should like to secure the aid of college graduates throughout the country in determining the requirements in English of practical everyday experience.

"Therefore, I am asking you to co-operate with me in this study by sending the names and present addresses of those graduates of your 1936 class who represent 20 per cent of the membership of that class whose grades in required courses in English Composition represent an approximately equal distribution of grades from A to D or the equivalent. If you do not require that students pursue courses in composition, please furnish the names and addresses of those having approximately the same distribution in general averages.

"I shall be pleased to recognize your interest in this study by sending you a summary of the findings.

"Although I realize how busy you must be, I ask you kindly to assist me in this matter. A self-addressed, stamped envelope is enclosed for your convenience."

No one in higher education is called upon to fill out as many statistical reports and questionnaires as is the registrar. Because of the time consumed in supplying information like the above and because of the doubtful value of such information when it has been compiled by one who has obvious limitations in research, it might be well for registrars to distinguish between the two kinds of research and to discourage the offenders by replying: "Informa-

tion cannot be supplied. This study, judged by your questionnaire, is obviously pseudo-research."

Politics Again

On Saturday, July 31, four deans, the registrar, and two administrative officers of the North Dakota Agricultural College were dismissed on less than three hours notice. Some of these officers, including Registrar Parrott, had given almost a lifetime of service to the institution. For several decades their names had been associated with the advancement of agriculture and the training of youth in the state of North Dakota. The communication advising them of the termination of their duties brought no charges and suggested no reason.

It is difficult to realize that men who have had the advantage of the American public school would use that institution which is most responsible for an intelligent citizenry for political patronage or for the advancement of personal and selfish purposes. Surely we cannot expect the American people to have an abiding faith in the public school if the indiscreet actions of patronage parcelling politicians go unchallenged.

Historic New Orleans

Some cities know history only as a written record, while others know it only as a monument, marking the spot where the first settler built the first cabin, or commemorating the erection of the first bank or theater. Time, combined with the evolution of a progressive, ambitious nation, brings about a metamorphosis which slowly but surely obliterates the traces of our beginnings.

New Orleans, along with the rest of the country, has also progressed. From the little French settlement of 1718, she has developed into a modern city of half a million people, with billions of dollars invested in business and industry. But unlike other American cities, a peculiar reverence for the past has led to the preservation, practically intact, of the landmarks of her early history. And pride in her long and varied career has kept alive tradi-

tions of the years gone by. Delegates to the April convention of the American Association of Collegiate Registrars will find these New Orleans sentinels of antiquity particularly interesting.

The Vieux Carre, literally translated "Old Square," but better known as the French Quarter, is almost the same now as it was when erected over a century ago. Temporary structures predominated at first, to be sure. But with time came security, and the beginning of permanent construction. Hence, New Orleans has what is probably the oldest building in the Mississippi Valley in good repair, Madame John's Legacy, built about 1727. The Ursuline Convention was under construction before that date but was not completed until 1734.

Heart of the old city, gathering place for the populace on Sunday and the scene of all important announcements was the Place d'Armes, known today as Jackson Square. All of the famous buildings around this square have been preserved to this day. Fronting it are the Cabildo, where the transfer of the Louisiana Territory from Spain to France to the United States took place; St. Louis Cathedral, built in 1794; and the Presbytere, built about the same time.

On the upper and lower sides of the old square are the Pontalba Apartments, America's first apartments.

Scores of other landmarks of old remain to this day to tell their stories of the past. The French Market has a colorful history; and so do the Absinthe House, where this drink was first made; the Napoleon House, said to have been built for him upon his expected escape from St. Helena; and Pirate's Alley with its many balconied buildings.

Narrow streets, unique buildings with wrought and cast iron balconies, fan windows, myriad shaped roofs and chimneys, and patios give to this section of New Orleans the atmosphere of old France and old Spain. The architecture in that section can be said to be "Creole," representing the combined influence of the French and Spanish Domination.

But New Orleans points to its historic treasuries not alone in the Vieux Carre. At Chalmette, just below the city, America's

second most important military event took place during the War of 1812 when Andrew Jackson and his backwoodsmen and pirates settled forever the question of ownership of the Louisiana Territory, now all or part of seventeen states. Needless to say, the battlefield has been kept in a good state of repair.

In the heart of the city, in what is known as the Garden District, are to be found scores of antebellum homes, reminders of one of the most amazing eras ever known to American agriculture and of the days when New Orleans was the wealthiest city in the country. Nearly all of these old homes, characterized by cypress construction, high ceilings, costly chandeliers, marble mantels, numerous rooms and wide porches, are still occupied by the descendants of the original owners.

Surely, New Orleans offers much for the lover of the historic.

—P. J. RINDERLE

TWENTY-SIXTH ANNUAL CONVENTION—NEW ORLEANS
APRIL 19, 20, 21, 1938

OF PROFESSIONAL INTEREST

Abstracts from Studies

Dr. Omar C. Held, Personnel Assistant to the Dean of the College at the University of Pittsburgh, reports that the University of Pittsburgh has for the past six years been subjecting to special entrance examinations all applicants coming from the lowest fifth of their high school classes, so that it might be supplied with additional evidence of the fitness of such candidates to pursue a college course with profit and satisfaction. Two examinations have been required—one a high school content examination and the other the American Council on Education Psychological Examination.

The American Council on Education Psychological Examination is also given to all freshmen after admission. This makes possible a comparison of the performance of students who must take the entrance examination before being admitted with those who were graduated in the upper four-fifths of their high school classes and were thereby admitted on certification alone.

The statistics thus far available are most interesting. From 1931 to 1933 there were 138 applicants who ranked in the lowest fifth of their high school classes and who were permitted to take the special entrance examinations at the University. They ranged from the first to the ninety-third percentile on the American Council on Education Psychological Examination, with an average percentile of 27.43. Seventy-two of the 138 were accepted and their average percentile was 40.32. Sixty-six were rejected. Those rejected had an average percentile of 14.62 on this examination. Fifty-one of the fifth fifth applicants who were rejected ranked from the first to the twentieth percentile on the American Council Examination, the assumption being that they were the most likely to be poor university risks. A survey of the test performance of the 1932-33 college freshmen from the upper four-fifths of their high school classes alone shows that fifty-nine rated from the first to the twentieth percentile on this same examination. These fifty-nine

students earned a quality point average of .1764 for their freshman year. A minimum of .75 is required if a student expects to be graduated in four years. Nine of these fifty-nine students were graduated in the upper fifth of their high school classes, thirteen from the second fifth, twenty-five from the third, and twelve from the fourth fifth of their high school classes.

It would seem that the following conclusions are justified from the above data:

1. Requiring admission examinations of students from the lowest fifth of their high school class undoubtedly assists in eliminating some very poor university risks.
2. Not all poor college risks come from the lowest fifth of their high school classes.
3. Some students who are quite capable as measured by the American Council on Education Psychological Examination may rate in the lowest fifth of their high school class.

The implications of this problem go far beyond the question of university admissions. Fundamentally they relate themselves directly to vocational guidance. If we merely content ourselves by saying that a given student seems to be a poor university risk, we have not done much to assist such a student in the solution of his difficulty. He is still anxious to find out how he can best fit himself for the combat ahead.

There is no single criterion that may be safely adopted as an absolute guide in determining who should go to college or what particular career should be pursued. The matter of determining the college or the career is one that should receive early and careful consideration in junior high school, and even in elementary school. Complete genetic data with record of performance in school, in the home, at summer work, on test of intelligence, aptitudes, interests, etc., should be kept. On the basis of all these data—which should be maintained in cumulative form—students should, within limits, be given early guidance of an educational and vocational nature, with a view to assisting them into the type of work and training for which, all things considered, they seem best fitted and in which they seem most likely to succeed.

The table presented below contains a summary report by J. O. Burnett of Northern Montana College, on the policy in 191 institutions with respect to correspondence study courses. This report includes a reply from every state college and state university in the United States.

SURVEY OF CORRESPONDENCE STUDY CREDITS IN REPRESENTATIVE COLLEGES AND UNIVERSITIES IN THE UNITED STATES

	YES		NO	
	Number	% of Total	Number	% of Total
1. Does your institution offer subjects by correspondence?	69	36.2	122	63.8
2. Is college credit given for correspondence study courses completed with your institution?	67	35.1	124	64.9
3. Is the amount of correspondence credit which a student is permitted to complete in partial requirement for the Baccalaureate degree or diploma limited to a maximum number of hours?	177	92.7	14	7.3
4. Are there any departments, schools, or colleges in your institution which have special regulations relative to acceptance of correspondence study as distinguished from the general policy of the institution as a whole?	30	15.7	161	84.3
5. (a) Does your institution accept correspondence study credits when presented by students transferring from other fully-accredited colleges or universities?	134	70.2	57	29.8
(b) If so, does your institution place a maximum limit upon the number of correspondence study credits that will be accepted from transfer students?	169	88.5	22	11.5

	INCREASE		DECREASE		NEITHER	
	No.	% of Total	No.	% of Total	No.	% of Total
6. Has there been a tendency in your institution in recent years to increase or to decrease the number of credits earned through correspondence study that will be accepted toward graduation?	12	6.3	39	20.4	140	73.3

After a very comprehensive study of the problem of articulation of high school and college, Registrar C. A. Kaufmann of Newbury College concludes that the tendency is away from speci-

fied subject requirements. The colleges are abolishing arbitrary admission requirements and are increasing the number of ways by which high school graduates may gain admission to college. One of the greatest hindrances to improved articulation at present is the lack of effective guidance programs in the secondary schools and college. Remedies suggested for better articulation are: correct evaluation of certain entrance criteria; committees composed of secondary school and college representatives; special conventions for college and secondary school authorities; co-operation with the State Department of Education.

The Research Office Bulletin of the University of Louisville presents the following interesting table concerning student mortality in college.

STUDENT MORTALITY IN THE COLLEGE

TABLE A: SEPTEMBER ENTRANTS, 1930–1934

Entrants	After 1st Sem.	After 2nd Sem.	After 3rd Sem.	After 4th Sem.	After 5th Sem.	After 6th Sem.	After 7th Sem.	Grad.
				Per Cent				
1930	17	36	44	62	66	79	80	20
1931	15	41	46	62	63	81	85	14
1932	20	47	52	62	66	85	88	12
1933	16	42	52	70	76	85		
1934	17	36	47	64				

TABLE B: FEBRUARY ENTRANTS, 1931–1935

Entrants	After 1st Sem.	After 2nd Sem.	After 3rd Sem.	After 4th Sem.	After 5th Sem.	After 6th Sem.	After 7th Sem.	Grad.
				Per Cent				
1931	45	57	62	69	83	86	87	13
1932	32	41	54	59	80	82	93	7
1933	43	43	69	69	75	82	85	15
1934	36	46	57	61	72			
1935	45	66	75					

TABLE C: REASONS FOR WITHDRAWALS

(Based on 1069 Withdrawals, September 1930–February 1935)

On warning, probation, dismissal	32%
To professional schools	10%
Transcripts to other colleges	14%
Transferred to D.A.E.	5%
Other	1%
Unknown	39%

With the Association

The April meeting of the Association approved the resolution to publish in this number of the JOURNAL the following proposed code of ethics on the recruiting of students, which was presented to the North Central Association. The code is presented herein with the hope that it will stimulate national action toward a more ethical basis in the selection of students for college.

Readers of the JOURNAL who wish to make any comments concerning the proposed regulations are requested to communicate with Registrar I. M. Smith, of the University of Michigan.

A PROPOSED CODE OF ETHICS RELATING TO PRACTICES AND PROCEDURES IN THE RECRUITING OF STUDENTS FROM SECONDARY SCHOOLS BY INSTITUTIONS OF HIGHER EDUCATION

Submitted to the North Central Association of Colleges and Secondary Schools by its Executive Committee at the time of the 1937 Annual Meeting for continued study with a view to the final adoption at the time of the 1938 Annual Meeting of a definite policy relative to the recruiting of students.

ETHICAL AND UNETHICAL PRACTICES AND PROCEDURES IN THE RECRUITING OF STUDENTS FROM SECONDARY SCHOOLS BY INSTITUTIONS OF HIGHER EDUCATION

Educational and vocational guidance of high school pupils is one of the major responsibilities of a secondary school. In this work it is sometimes desirable to have institutions of higher education participate in the programs. The chief end in this phase of guidance is to present to the pupils information that assists them in choosing the college that will serve best their interests and needs. All participants in this program should keep clearly in mind that *"guidance and not salesmanship"* is the method to employ.

In all matters pertaining to the solicitation of pupils by an institution of higher education, involving a secondary school, the right of initiative belongs to the high school authorities.

PRACTICES AND PROCEDURES THOUGHT ETHICAL

1. It is considered ethical for an institution of higher education to send to a high school, with or without an invitation to do so, published

information and advertising materials such as catalogs, announcements, posters, photographs, class annuals, and any like materials and to use the press and the radio in broadcasting information relative to the institution.

Likewise it is considered ethical for a high school to display and make use of published information and advertising materials relating to any particular institution and to announce radio programs, but the authorities in charge of a high school are under no obligation to do so.

2. It is considered ethical for the authorities of an accredited high school to invite professionally qualified, *bona fide,* responsible representatives of the institution of higher education to participate in their educational guidance program. It should be understood, however, that it is considered unethical for a representative of an institution of higher education while participating in such a conference to advertise in any way his institution, except that he may answer questions pertaining to such matters as facilities provided, courses offered and expenses involved where such information is requested by the high school pupil.

3. It is considered ethical for a secondary school to hold a "College Day." This is a day selected and announced by the high school authorities when invited representatives of a number of institutions of higher education may confer with high school pupils who plan to continue their schooling beyond the secondary level. The initiative for these conferences rests with the pupils who are seeking information relative to the institutions of higher education in which they are most interested. In case a secondary school holds a college day, it is assumed that proper and adequate preparations for such a program are to be made by the high school in advance of the day.

4. It is considered ethical for the authorities in charge of a secondary school to furnish on an *application for admission* blank such information as the scholastic standing or rank of the pupil in his class or school and to indicate outstanding abilities and achievements of the individual pupil who has requested that such a record be sent to a particular institution.

5. It is considered ethical for the authorities in charge of a secondary school to co-operate with their pupils in securing such financial helps as scholarships, grants-in-aid, loans, and part-time work which have been announced in published information pertaining to an institution of higher education. It is considered unethical for representatives of a secondary school to seek for their pupils work or any other form of financial assistance not included in the publications of the institution.

6. It is considered ethical for an institution of higher education to provide on its campus special programs, festivals, displays, and contests that enable invited high school pupils to become familiar with campus life and with the work and facilities of the institution, provided these programs do

not interfere seriously with the working schedule of the high schools invited.

It is considered ethical for the authorities in charge of a secondary school to announce to the pupils such programs provided by institutions of higher education and permit them to attend or participate when in the opinion of these authorities it is to the best interests of the pupils to do so.

PRACTICES AND PROCEDURES THOUGHT UNETHICAL

1. It is considered unethical for an institution of higher education to send to a secondary school a representative or group of representatives for the purpose of securing students without first having received an unsolicited invitation or one following an inquiry concerning the possibility of receiving such an invitation from the secondary school.

It is considered unethical for an accredited high school to make any arrangements for uninvited representatives of an institution of higher education to meet with individual pupils or groups of pupils either within or without the school building.

2. It is considered unethical for an institution of higher education to send to a high school for the purpose of interviewing pupils any representative whose salary depends either in part or wholly on his success in securing students or who is paid on a commission basis for such service.

It is considered unethical for the authorities in charge of a secondary school to make any arrangements for such a representative to meet with high school pupils.

3. It is considered unethical for a representative of an institution of higher education when conferring with pupils in a high school to misrepresent his institution by exaggerating the ability of the institution to place its graduates, by announcing low fees and later exacting a large number of special fees, by the granting of part-time jobs which at the end of the year are withdrawn and awarded to other entering students. By exalting the ability of the institution to meet the special interests and needs of the students, and by making statements and comparisons not based on facts and which may prove libelous or unfair to another institution and detrimental to the student.

4. Bidding on the part of representatives of institutions of higher education for pupils with high scholarship records, outstanding athletic achievement or ability or high quality of performance in other special fields is considered unethical.

(Bidding consists of offering a greater inducement to a pupil to attend a particular institution of higher education than that offered by another institution of higher education when the literature of the particular institution has not mentioned the special inducement, such as a scholarship, the

waiving of fees, a student loan plan, or an opportunity to earn a part or all of his expenses by working while attending the institution.)

Scholarships and other forms of financial aids which either have not been published or which in amount are beyond that mentioned in the publications of an institution of higher education should not be offered to a prospective student by an institution of higher education. No member of the administrative, teaching, or athletic staff of a college or university should be in a position to offer a prospective student scholarships, special inducements and any form of financial assistance. The awarding of all such assistance should be in charge of a special committee of the faculty of the institution. A concise statement of scholarships and of the method of applying for them and of the opportunities for employment is not considered objectionable.

5. It is considered unethical for an accredited secondary school to send to an institution of higher education, to an individual, corporation or business firm any list of high school pupils who either will graduate or who have graduated from that particular high school which indicates in any way the scholastic rank in the class or school or which in any way designates those pupils with outstanding abilities. Any request for such a list sent to a secondary school is considered unethical.

6. It is considered unethical for the authorities in charge of a secondary school to participate in any way in the present increasing demand for more financial aids from the institutions of higher education in the form of scholarships and other grants.

(There has been a growing tendency in the high school world to demand more and more aid from the college in the form of scholarships and other grants. The general attitude is resulting in a scholarship racket and the colleges themselves are the victims of their own eagerness to attract students to their campuses.)

It is important that a distinction be made between true scholarship and all other financial grants which will be clear to the applicants. A strong emphasis should be placed on the honor attached to the awarding of a scholarship and it should be emphasized that all other grants are relief measures and merely badges of decent citizenship rather than special honors.

DEFINITIONS. *A Scholarship.* The term "scholarship" should be reserved to mean a financial award made in recognition of superior ability and achievement as indicated by the pupil's complete high school record.

A Grant-In-Aid. The term "grant-in-aid" should be reserved to mean a financial grant in the awarding of which "need" is a determining factor.

It is unquestionably ethical to publish or announce scholarship awards as honors on graduation from high school but it is considered unethical to

publish or advertise any but scholarships, as here defined, as honors to high school pupils.

7. One of the most unethical things a college can do is to try to operate when it knows that it is so situated with respect to its financial condition, its faculty, and its facilities that it must hand "gold bricks" to a majority of its graduates. A bankrupt college ought to go into voluntary bankruptcy even more quickly than a bankrupt business.

8. "Shopping" by parents and pupils for the best obtainable awards is considered unethical and should be discouraged by the secondary schools and the higher institutions.

The same rules and policies as above stated shall also apply in any case where the alumni of a particular institution are involved in the securing of students. Members of the faculty of a secondary school as alumni of institutions of higher education are not excepted. High school principals and teachers should keep in mind that the particular college or university which satisfied their needs and interests may not be the institution which can serve best their pupils.

At the Kansas City meeting of the A.A.C.R., the following recommendation was approved by the Association:

"Your committee recommends that the Association approve a study during the coming year relative to institutional practices and procedures in respect to scholarship discipline regulations and administration. Approval of this recommendation would imply a willingness on the part of each member of the Association to make a report to the committee on how scholarship discipline is handled in each member institution."

In accordance with the above recommendation, under the date of May 31, 1937, the committee has sent an elaborate questionnaire to all members of the Association. More than 300 of these have been filled in and returned. Chairman Smith reports that the tabulation will not begin until late in the fall and that the committee will be able to include those questionnaires which are returned after the publication of the October number of the JOURNAL.

President Kerr has made the following committee appointments:

Committee on Local Arrangements for 1938 Convention

Mr. G. B. Hasty, Tulane University, Chairman
Mrs. Ruby B. Pearce, Louisiana Polytechnic Institute

Miss Theresa A. Berch, Dillard University, New Orleans
Mr. W. S. Mitchell, Louisiana State Normal College
Mrs. W. H. Gates, Louisiana State University
Miss Margaret E. Carey, Loyola University, New Orleans

Committee on Office Forms and Filing Equipment

Mr. H. W. Holter, Bucknell University, Chairman
Mr. D. R. Fitch, Denison University
Mr. E. J. Howell, A. & M. College of Texas
Miss Emma E. Deters, University of Buffalo
Mr. W. S. Mitchell, Louisiana State Normal College

At the May 7 meeting of the Colorado-Wyoming Association of Registrars, Mr. R. M. Carson, of the Colorado State College of Education, read a paper on the "Influence of the Scientific Method and the Philosophic Method on Personnel Work." "Orientation of Freshmen and Transfer Students" was presented by Mr. Fred E. Aden and Miss Helen G. Duggan, of the University of Colorado.

Mr. S. J. McCracken, of Colorado State College, reported the national meetings of the North Central Association and the American Association of Collegiate Registrars. Among questions informally discussed were the desirability of including in transcripts removed conditions and incompletes and personnel data, and the need of improvement in the form of transcripts mechanically reproduced.

It was voted to invite all the junior colleges of Colorado to become members of the Association.

The Twelfth Annual Convention of the Pacific Coast Association of Collegiate Registrars, combined with the Annual Meeting of Northwest Registrars, will be held at Whitman College in Walla Walla, Washington, on November 8 and 9.

Meetings and Anniversaries

The Sixth Educational Conference, which is to be sponsored by the Committee on Measurement and Guidance of the American Council on Education, the Commission on the Relation of School and College of the Progressive Education Association, the Co-

operative Test Service and the Educational Records Bureau, will be held at the Hotel Roosevelt in New York City on October 28 and 29.

The following speakers will appear on the program: President Conant of Harvard; President Henderson of Antioch; Dean McConn of Lehigh; Wilford Aiken of the Progressive Education Association; B. R. Buckingham of Ginn and Company; Walter C. Eells, Co-ordinator of the Co-operative Study of Secondary School Standards, and three leaders in the field of reading, namely, William S. Gray, Marion Monroe and Donald D. Durrell.

The Second National Conference on Educational Broadcasting will be held at the Drake Hotel in Chicago, November 29, 30, and December 1, 1937.

The objectives of this Second Conference, as formulated by a committee, are as follows:

I. To provide a national forum where interests concerned with education by radio can come together to exchange ideas and experiences.

II. To examine and appraise the situation in American broadcasting as a background for the consideration of its present and future public service.

III. To examine and appraise the listener's interest in programs that come under the general classification of public service broadcasting.

IV. To examine the present and potential resources of education through radio.

V. To examine and appraise the interest of organized education in broadcasting.

VI. To bring to a large and influential audience the findings that may become available from studies and researches in the general field of educational broadcasting, particularly such studies and researches as may be conducted by the Federal Radio Education Committee.

Pomona College, Claremont, California, a privately endowed liberal arts, co-educational college of limited enrolment (750), is lo-

cated in Southern California, forty miles east of Los Angeles in Los Angeles County. Incorporated in 1887 under the auspices of the Congregational Church, Pomona College has become non-denominational and is the parent institution of the Claremont Colleges group plan begun in 1925 and embracing Pomona College, Scripps College for Women and Claremont Colleges, graduate school. It is a residential college requiring its students to live in college dormitories. The assets of the college total approximately seven million dollars, of which $2,920.409, is held as endowment.

On November 8, 1837, Mount Holyoke Seminary opened its doors for a group of eighty "young ladies." Its charter had been previously secured on February 11, 1836, by the founder, Mary Lyon. On March 8, 1888, the charter for Mount Holyoke Seminary and College was granted, and on January 31, 1893, the Seminary was dropped and the institution became Mount Holyoke College.

Last May the College celebrated the completion of one hundred years of higher education for women and paid tribute to its retiring president, Dr. Mary E. Woolley, who had headed the college for almost thirty-seven years. The new academic year began formally on September 23 under the leadership of President Roswell Gray Ham.

The original Seminary building was destroyed by fire in 1896, but on that site now stands Mary Lyon Hall, housing the administrative offices and adjoining the new Abbey Memorial Chapel now under construction.

DePauw University is celebrating its one hundredth anniversary this year. Founded as Indiana Asbury University in 1837 by the Methodist Episcopal Church, its name was changed to DePauw University in 1884, honoring Washington C. DePauw, wealthy New Albany manufacturer in Indiana, who saved the institution from financial death through a large gift of money.

DePauw started in a one-room school with two teachers and five students. Today it boasts of twenty-six modern buildings located on a campus of some sixty acres with a student body of 1,250 and a faculty of eighty-five. It is an eight million dollar institution,

of which six millions are in endowment and two millions in plant.

DePauw was one of the first institutions in the middle west to become co-educational. Women students were first admitted in 1867. It has lived close to the Methodist Church which founded it and has become known as "The Maker of Bishops." Four of the last five presidents of DePauw have been elevated to the Bishopric.

One of the motives which prompted the founding on March 18, 1837, of Muskingum College, located at New Concord, Ohio, was to "prepare young men for entering higher colleges and universities." For a number of years the educational advantages at this institution were limited to young men. In March of 1854 co-education was assured at Muskingum, and since that time it has continued as a liberal arts college for men and women.

For many years the college was conducted as a local institution, governed by a local board of trustees. In 1877 the formal control was transferred to the United Presbyterian Presbyteries of Muskingum and Mansfield. In 1888 its control was vested in the United Presbyterian Synod of Ohio. These transfers have largely increased the constituency of the school and made it the representative of higher education for a Christian body having a large membership in Ohio, Michigan, West Virginia, and Pennsylvania.

The Board of Trustees is elected by the Synod of Ohio, nine of them being nominated by the Alumni Association of the college. Although under denominational care and control, Muskingum College offers her advantages to all on equal terms without regard to denominational affiliations.

In August, 1837, wagons and heavy carriages brought the first students of New Garden Boarding School to their first classes. Chartered January 13, 1834, opened in 1837, the institution was, in January, 1889, given authority to grant degrees, and the name was changed to Guilford College.

Guilford has always educated women as well as men. In fact, it is the oldest co-educational institution in the South.

From the time of its establishment, this institution has attempted to provide a broad, liberal culture in home-like surroundings and under strong religious influence. While under the control of the Society of Friends, it is in practice non-sectarian.

Knox College joins the Centenarians this year. Her actual one hundredth birthday, the anniversary of the day in 1837 when the Illinois legislature in Vandalia granted her charter, was February 15.

Such distinguished sons of Knox as John Huston Finley, editor of the *New York Times,* and Earnest Elmo Calkins, "Dean of American Advertising," were among the Founders' Day speakers.

On April 3, 1837, the Louisville City Council appropriated a tract of land and $50,000 for a building and equipment. Thus began the University of Louisville.

Controlled by a Board of Trustees, appointed by the Mayor, the University of Louisville is supported by municipal taxation, student fees, and endowment.

Each of the schools is accredited by its national accrediting agency, and the University is on the approved list of the Association of American Universities.

Louisville is America's Oldest Municipal University. Its School of Medicine is the oldest one west of the Alleghenies.

In April Occidental College celebrated the fiftieth anniversary of its founding. Founded on April 20, 1887, the institution opened its doors on September 11, 1888.

Oberlin College celebrates this year the Centennial of Co-education. Mention of this event is made on page 114.

Personnel Items

The *McMaster Alumni News,* published by McMaster University, at Hamilton, Canada, reports that Mr. Elven Bengough is completing his thirtieth year as registrar of that institution.

In September, 1936, Mr. Paul Bender assumed office as registrar

of Goshen College. Professor Silas Hertzler was registrar previous to that time.

Dr. C. W. Helmstadter, registrar of the University of Omaha, has added to his registrarial duties those of assistant dean in charge of developing the new section in Applied Arts and Sciences at that institution.

Professor H. H. Armsby, registrar of the Missouri School of Mines and Metallurgy, and treasurer of the A.A.R.C., married Miss Mary Ruth Bundy at Ottawa, Kansas, on June 22, 1937.

The bride received an A.B. degree from Ottawa University in 1936 and matriculated at the University of Chicago and the University of Kentucky for graduate study, with special courses in college administration. She has served as secretary and later president of the Kansas Association of Collegiate Registrars. Mrs. Armsby will be remembered by the delegates to the Kansas City convention as a member of the local arrangements committee.

Professor Armsby is well known to the members of the Association of which he is treasurer and a member of the executive committee. In April, he was elected president of the Missouri Section of the Society for the Promotion of Engineering Education.

Mr. Ira M. Smith, registrar of the University of Michigan, was awarded an honorary degree of Doctor of Laws from Ashland College, Ashland, Ohio, at commencement exercises at the close of the summer term there in August.

Registrar Smith has been connected with the college in an advisory capacity for the past seven or eight years and has been elected a member of the school's board of trustees for next year.

Miss Fannie Kaufmann, assistant to the registrar at the University of Michigan, is on leave of absence this year and is serving as registrar at the New Mexico State Teachers College located in Silver City, New Mexico.

Mr. William J. Dillon, formerly registrar at the University of Santa Clara, is now holding the same position at the University

of San Francisco. Mr. George L. Singewald has taken over the registrarial duties at Santa Clara.

Miss Elaine Stone, registrar of the Southern Branch of the University of Idaho at Pocatello, has been granted a leave of absence for the coming year to take work in guidance and personnel at Columbia University. Her place will be filled by Miss Dorothy Requa, from the registrar's staff at the University of Idaho at Moscow.

Miss Edythe Stephenson resigned her duties as registrar of the Washington Missionary College to become Mrs. Frederec B. Cothren. She is now "at home" in California.

In a letter to the Editor, Mr. T. Y. Hsieh, Registrar of Lingnan University, Canton, China, expresses his desire of becoming a member of the Association. An excerpt from Mr. Hsieh's letter follows:

"Our registrar's office is interested in the proceedings and publications of your association. Our university library has subscribed to your quarterly bulletin, which is not only valuable for the stimulation of professional interest in this office, but is also useful to the university as a whole in regard to our policies on admissions, registration, curriculum, etc."

Mr. John W. Cravens, who served as Registrar of Indiana University from 1895 until his resignation last summer, has been succeeded by Mr. Thomas A. Cookson.

The newly appointed registrar of the Hoosier State University attended I.U. from 1902 to 1906 and has been connected with the administration staff since 1908.

Mr. Cravens became Registrar of Indiana University in 1895 and secretary in 1915. He began his higher education at Central Normal College, Danville, Indiana, from which he received his B.S. degree. He received the A.B. degree from Indiana University in 1897, and his A.M. degree from the same institution in 1920.

He has had a long and varied career as newspaper editor, public office holder and educational administrator.

On June 9, Grove City College, Grove City, Pennsylvania, dedicated the Mary Anderson Pew Dormitory for Girls. This building was given by Mr. J. Howard Pew, Mr. Joseph Pew, Mrs. Alaric Myrin and Miss Ethel Pew, in memory of their mother, Mrs. Mary Anderson Pew.

On June 10 at commencement, it was announced that a gift had been received from Mr. Harry Crawford of Emlenton, Pennsylvania, which is to be used in the erection of a new Administration Building. Plans are now being prepared and it is hoped to start work this fall.

In co-operation with the Department of Ceramics of Rutgers University, New Jersey College for Women is now offering a curriculum in Ceramic Art.

BOOK REVIEWS

An Aid in Occupational Counseling.—For the last three years the General College of the University of Minnesota has been experimenting with a course in Occupations. E. G. Williamson, Director of the University Testing Bureau, has utilized this experience in the writing of a text-book[1] for a similar course in high schools and junior colleges.

A discussion of what colleges can do for students introduces the reader to some of the fundamental considerations and reveals very interestingly the author's concept of the relationship between a college education and training for an occupation. His thesis is "education for living," which means education for work, education for leisure, and education for social responsibility. He stresses the values of general education, giving direct training for occupations a place of last importance. General education itself is primarily vocational education, because it is impossible to separate cultural and vocational values. The lawyer, for example, must have a knowledge of psychology, economics, politics, technology, English composition, and public speaking. This is refreshing in the light of the present confusion in thinking about professional training.

While he stresses the vocational value of general education, because the cultural and vocational values cannot be separated, he appears to recognize a rôle for general education as such because he says that general education may precede or run parallel with occupational training. He does not indicate specifically what his beliefs are with reference to the commonly held opinion that general education, as far as the college is concerned, is the primary function of the junior college.

Although college education should be "education for living," college education is not for all, according to this author's opinion. Students who do not seriously want a general education and are

[1] *Students and Occupations,* New York: Henry Holt and Company, pp. xxiv + 437. $2.50.

not able to prepare for the professions should not go to college. They should enter trade schools, apprenticeships, or direct employment. In other words, they can do with less education for living. There is some inconsistency here, for if education for social responsibility is a part of education for living, society is not adequately served by a program that denies such education to a majority of its citizens. In fact he says in another place that it is vital to the continuance of American democracy that its individual members have this rounded education for living. In this statement he does not make a very good case for the selectivity he earlier advocates for admission to college.

It seems that the author has neglected an opportunity here to show the rôle to be played by adult education. By opening an adult education program to those who do not have the benefit of a college "education for living" they can be continuously educated and re-educated. The re-education function, especially, is very important in these days of technological unemployment. The utilization of an adult education program would justify the degree of selection he advocates at the college admission level.

Having laid the philosophical foundation for his discussion, he leads the reader to the top of the mountain and shows him, first, a panorama of the work of the world, laid out in broad occupational fields such as medical occupations, occupations in teaching, etc. He advocates that this approach be used in the teaching of occupations, because the diagnostic techniques of guidance are more efficient in identifying broad fields, and recommends that the student make a tentative occupational choice in terms of a broad field.

From the top of the mountain the reader is led down into the broad occupational fields and is conducted through each with care, observing the separation into smaller fields and their interrelations.

The information given is not exhaustive, but it serves as exploratory material. The student of occupations is urged to read widely from supplementary materials cited.

The book is an unquestioned contribution to a very difficult area of education. It is frank almost to the extent of "debunking," and

some debunking has been needed. The purely visionary "hitch your wagon to a star" doctrine receives some down-to-earth experiences.

Good Advice from Dean McConn.—Dean Max McConn of Lehigh University has written a book[1] that helps young men and women, and their perplexed parents, to find the answers to a thousand and one questions concerning plans for college. The problems are classified under the following general heads:

1. Who Ought to Go to College?
2. Choosing a College Course.
3. Choosing a College.
4. What Will It Cost?
5. Preparing for College.
6. The Problem of Living at College.
7. Planning to Make the Most of It.

Each topic is discussed intimately, as if the Dean were talking to a boy or girl or a parent across his desk, in language that is remarkably free from academic "lingo." The boy or girl who should go to college should possess:

1. A fairly high degree of *bookish aptitude.*
2. An awakened *intellectual interest in something.*
3. A fairly high degree of *self-mastery* or *capacity for self-direction.*

Parents who feel at a disadvantage in a discussion of scholastic aptitude will welcome his use of the term bookish aptitude. "The college job is essentially a bookish job, and the primary requisite for success in college is some degree of bookish aptitude." Simple, isn't it? Tests of bookish aptitude, achievement tests, rank in class, grades, etc., are discussed without erudition, one might say. Many questions which have direct answers, he answers in simple terms. Those which cannot be answered directly because of a variety of contingencies, he analyzes and sets forth the pros and cons, out of his long experience, in such a manner as to guide the reader to the finding of the right answer for himself.

The value of the book is not limited to the young people who

[1] *Planning for College,* New York: Frederick A. Stokes Company, pp. ix+267. $2.00.

are planning to go to college, and their parents. The college personnel officer who is interested in making his everyday professional vocabulary more effective will appreciate its simple logic; and this reader has a firm suspicion that his colleagues will join his advisees in applauding the improvement.

On the whole the advice given is sound, although in a few cases the author has allowed himself to make statements that may be challenged by his co-workers. For example, in his discussion of choosing a college he says, "I should strike off my list forthwith any college or university which is not recognized both by the regional association covering the area in which it is located and by the Association of American Universities." Many readers will be able to cite excellent colleges that would have no students if this advice were followed; colleges that have given distinguished service long before they could be accredited or even desired to be accredited. The writer well recalls a comment made by a prominent educator upon hearing that a college long renowned for its unique plan of education had been accredited by the regional accrediting agency. His comment was, "I thought that ——— college had some individuality."

Likewise his advice that a college, however small, which has fewer than 50,000 volumes in the library must be doing much of its work out of textbooks seems not to be well considered.

It is a rare book indeed, and a dull one too, that agrees with all of its readers on all points, so we recommend it as a book well worth the writing and the reading.

Student Personnel Services.—The new accrediting procedure of the North Central Association of Colleges and Secondary Schools provides for the separate measurement of several fields of institutional activity. The results of these investigations are being published as a series of monographs on the *Evaluation of Higher Institutions.*[1] The field of student personnel service is the subject of one of these monographs.[2]

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[1] See *Bulletin of the American Association of Collegiate Registrars,* 12, 1 (October, 1936), p. 67.

[2] *Student Personnel Service,* Gardner, Donfred H., University of Chicago Press, 1936, pp. xx + 235. $2.50.

It was the purpose of this study to investigate the relationship between provisions for personnel services and educational excellence of institutions of higher education, in order to be able to utilize the measure of the efficiency of such services as one of the bases for accrediting. For the purposes of the study the field of student personnel service was divided into eleven parts as follows: (1) admission of students; (2) orientation of students; (3) student records; (4) educational and vocational counseling; (5) counseling about intimate personal affairs; (6) extra-curriculum activities; (7) loans, scholarships, and grants of aid; (8) health service; (9) housing and boarding of students; (10) placement service; and (11) discipline. The activities carried on in each of these fields were analysed by a survey of previous investigations and by an investigation of student personnel service in fifty-seven institutions in the North Central Association. From these investigations a series of eleven score cards (one in each of the parts mentioned above) was derived. The total personnel service score for an institution is the composite of these eleven scores.

The validity and reliability of the score cards were tested respectively by finding the coefficient of correlation between the scores and a pooled subjective rating of the institutions by four surveyors, and by finding the coefficient of correlation between the scores on each of the eleven parts and the total scores. These coefficients range in the first case from .65 to .82 with an average of .75, and in the second case, from .71 to .94 with an average of .80.

It is obvious that the value of the coefficients of correlation with the subjective rating of general excellence as a test of validity depends upon the accuracy of this rating, which is the composite judgment of four investigators. The weighting of the items of the scales by expert opinion is subject to a similar criticism. Since the validity of the whole accrediting procedure depends upon the accuracy of these subjective judgments, it may be assumed that great care has been exercised at this point.

For use in accrediting procedure the scores of the fifty-seven institutions in the investigation are set up as percentile ranks. Thus the score of any institution can be expressed in terms of a percentile rank in this group.

Doubtless accrediting procedures are greatly improved by the construction of such scales, but the application of any scale encourages standardization which the North Central Association now professes to abhor.

Evaluating Graduate Education.—The age of brave men is not past! Laurence Foster has written a book[1] in which he deals with a subject which is full of dynamite. He evaluates the present system of education as it pertains to work on the graduate level, making a good many comparisons which will no doubt prove painful to some of the institutions involved. His method is objective and scientific and he is careful to avoid any semblance of favoritism.

The writer bases his discussion on the fundamental hypothesis that the immediate end of research is the discovery of truth and that the ultimate end is the application of this truth for the benefit of mankind. He points out that the major function of the graduate school is to educate leaders, and he advocates that all post-graduate education "be taught on the highest level of combined theory and practice to a limited number of able and industrious students." The introduction is refreshing and stimulating, calling attention to many of the obvious weaknesses in the present graduate system. In it the writer emphasizes the need for more practical application of the results of research. He advocates providing educational opportunities for "special" students as well as for the regular graduate students.

In the second chapter Mr. Foster answers the question, "What institutions are best fitted for graduate work?" giving in all thirty-four tables in which various graduate schools are ranked in order of excellence on various criteria of an objective character, such as the number of distinguished faculty members as evidenced by membership in various learned and distinguished societies. One table classifies the various departments of the leading graduate schools as distinguished and adequate.

Chapter three deals with various methods by which graduate

[1] *The Functions of a Graduate School in a Democratic Society,* New York: Huxley House Publishers, 1936. pp. 166.

facilities may be improved, a number of helpful suggestions being made. Chapter four takes up the problem of improving the graduate curriculum, and chapter five deals with the enrichment of graduate instruction. Present weaknesses are pointed out in all of these aspects of graduate education, and Dr. Foster points the way to a superior system of graduate instruction.

He devotes a brief chapter to graduate students and their selection, in which he cites some of the fundamental principles which must be observed in determining what students are to be admitted to the graduate school.

The author's conclusions are summed up in the final paragraph of the book as follows:

> Graduate schools are essentially educational institutions and hence, high academic ratings, commodious facilities, excellent curricula, and able teachers all exist for the production of leaders. Let no one confuse a theoretical specialist with an educated leader. No one can be a leader unless, in addition to his advanced knowledge and accomplishment in research, he is successful in the evaluation and application of his advanced knowledge and researches. When knowledge, methodology, and research through successful evaluation and application are combined to produce courage, skill, and wisdom, then and only then do we have a leader.

For those wishing to get a picture of the situation in our graduate schools and to secure a more thorough understanding of the principles which should govern graduate education, this book will be found most helpful. College administrators will find it a handy book of reference in sizing up the various departments of our graduate schools as well as the institutions themselves.

ENOCH C. DYRNESS

IN THE JOURNALS

"Co-operative Aids for Financial Problems," Lloyd Morey. *The Educational Record,* Vol. XVIII, No. 3, July 1937.

Administrators whose duties include the keeping of financial records will be interested in a summary of the assistance available through this Financial Advisory Service. This organization has prepared manuals for institutional accounting, gives advice in preparation of reports and has published bulletins dealing with financial administration. Members of the staff have been available as speakers on accounting problems. A recent publication sets forth the qualities to be sought and methods by which those interested in careers of this kind may prepare themselves.

"Should College of Education Seniors Elect Freshman Courses?" Raymond D. Bennett. *Educational Administration and Supervision,* Vol. XVIII, No. 3, February 1937.

Seniors in schools of education often find it desirable for various reasons to elect in their senior year courses offered primarily to freshmen. A study was made of 804 graduates of the College of Education of Ohio State University to determine the extent of such elections and to compare results. The conclusions were that the situation is not particularly alarming nor objectionable. The quality of achievement is reasonably satisfactory.

"Scholarships and Fellowships," Ella B. Ratcliffe. *School Life,* Vol. XXII, No. 6, February 1937, p. 168.

A report of a recent survey of scholarships and fellowships conducted by the United States Office of Education. The complete report "Bulletin 1936, No. 10, Scholarships and Fellowships Available at Institutions of Higher Education," is obtainable from the Superintendent of Documents, Government Printing Office, Washington, D.C.

"Subject Requirements for Matriculation in Colleges and Universities of New York State," *University of the State of New York Bulletin,* No. 1112, March 15, 1937.

Contains a summary of subject and unit requirements for admission to the colleges and universities of the State.

"Teacher Retirement Systems and Social Security," *Research Bulletin of the National Education Association,* Vol. XV, No. 3, May 1937.

This report gives the outlines of various forms of retirement systems used by the various states, in public schools and in industry, and a section is included dealing with systems used in colleges and universities.

"State University Branch Systems," John H. McNeely. *School Life,* Vol. XXII, No. 5, January 1937, p. 153.

The author describes recent developments to establish single state universities with branches or affiliated colleges. This plan has been established in Georgia, Montana and North Carolina. Partial adoption of the plan has been made in California, Missouri, Texas, and Virginia. Several states have established junior colleges as branches of the state universities.

"The Relative Predictive Value of Certain Entrance Criteria," Herbert A. Landry. *The Journal of Experimental Education,* Vol. V, No. 3, March 1937, p. 256.

The author has attempted to establish the relative value of four college entrance criteria for the prediction of both average freshman scholarship and scholarship in specific subject matter fields such as English, languages, social science, natural science, and mathematics. The elements used in the study were Grade 12 final subject marks, College Entrance Examination Board marks, scores on tests of scholastic aptitude of the College Entrance Examination Board, scores on tests of the Co-operative Test Service. The data was obtained from 416 records of sixteen private boys' schools in the east who had entered three eastern colleges. The data was statistically treated.

Some interesting results are reported. One conclusion indicated that the best entrance element for general prediction is the mean of the secondary school, Grade 12 adjusted final marks. The other elements, ranked in order of their predictive value, were the mean of the Co-operative Test Service test scores, the Verbal Aptitude Test scores, and the mean of the College Entrance Examination Board examination marks. Another conclusion was, "It is evident that there is yet great need for improvement of both admission technics and the measurement of college achievement."

Other conclusions and recommendations are given and the article closes with a list of references that are reports of the more significant investigations that have been carried on in the field of prediction of college achievement.

"Further Validation of the Rating Scales Used with Candidates for Admission to Oberlin College," L. D. Hartson. *School and Society,* Vol. 46, No. 1179, July 31, 1937, p. 155.

A continuation of a similar report made in 1932 to determine the validity of the rating scales used by the office of admissions. The rating scale consists of eight items that were compared with college scholarship, Ohio State University examination score. The study consists of 756 intercorrelations. After summarizing the various items of the study the author concludes "that the estimates made by the high school principal and teacher on the personal traits of intelligence, industry, attitude toward school work and methods of study, materially supplement either the scholastic record or the intelligence test scores for predicting college scholarship"; and "that personal estimates also supplement, to some degree, the combination of high school scholarship and test intelligence."

"Another Ranking of American Graduate Schools," Walter Crosby Eells. *School and Society,* Vol. 46, No. 1183, August 28, 1937, p. 282.

Reference is made to a recent volume, "The Functions of a Graduate School in a Democratic Society," by Laurence Foster, in which publication graduate schools are ranked from various standpoints. The author has suggested another rating using 28 criteria and thereby ranks 16 graduate schools according to the composite of the 28 functions.

"What Kind of College Gets the Bright Students?" Jordan T. Cavan. *Journal of Higher Education,* Vol. VIII, No. 5, May, 1937, p. 265.

A report on enrolments in colleges and universities in which various groupings are made and compared on basis of scores received by entering freshmen on the American Council on Education Psychological Examination. Groupings were made according to general type; enrolment, accreditation, control, geographical region in which located, retention, expensiveness to the student, income of the institution, and educational income per student. Some of the general conclusions were: "In the race to recruit relatively brighter students the tendency is found for the four year college to be winning over the junior colleges; general over teacher-training institutions; large over small institutions; nationally accredited over regionally accredited or unaccredited institutions; and eastern and midwestern institutions over institutions in other regions."

CALENDAR OF COMING EDUCATIONAL EVENTS

OCTOBER 7-8, 1937—24th Annual Conference on Administration and Supervision, State University of Iowa, Iowa City, Iowa.

OCTOBER 14-15, 1937—Iowa State Teachers Association, Northwest Section, Sioux City, Iowa.

OCTOBER 15-16, 1937—Conference for Teachers of Mathematics, State University of Iowa, Iowa City, Iowa.

OCTOBER 25, 1937—Kansas Association of Collegiate Registrars, Ottawa University, Ottawa, Kansas.

OCTOBER 28-29, 1937—Illinois Association of Collegiate Registrars, Loyola University, Chicago.

OCTOBER 29-30, 1937—Kentucky Association of Colleges and Universities, University of Kentucky, Lexington.

OCTOBER 29-30, 1937—Kentucky Association of Deans of Women, University of Kentucky, Lexington.

OCTOBER 30, 1937—Association of Kentucky Registrars, University of Kentucky, Lexington.

NOVEMBER 7-13, 1937—American Education Week.

NOVEMBER 8-9, 1937—Pacific Coast Association of Collegiate Registrars, Whitman College, Walla Walla, Washington.

NOVEMBER 26-27, 1937—Middle States Association of Collegiate Registrars, Atlantic City, New Jersey.

NOVEMBER 29-DECEMBER 1, 1937—Second National Conference on Educational Broadcasting, Drake Hotel, Chicago.

DECEMBER 3-4, 1937—Language and Literature Conference, State University of Iowa, Iowa City, Iowa.

DECEMBER 4-5, 1937—New England Association of Colleges and Secondary Schools, Boston, Massachusetts.

CENTENNIAL OF COEDUCATION

COEDUCATIONAL colleges and colleges for women will regard with especial interest the celebration at Oberlin on October 8 of the Centennial of College Education for Women and of Coeducation on the College Level. It would be difficult to make any adequate statement of the significance to modern education and indeed to modern civilization of this event. When Oberlin College, on September 6, 1837, admitted four young women to regular college work leading to the degree of Bachelor of Arts, it admitted uncounted thousands of other young women to the higher privileges hitherto denied to the "misjudged and neglected sex." Oberlin will celebrate on October 8 with appropriate exercises and with the dedication of a memorial gateway leading to an outdoor theater to be constructed in the near future.

A pencil drawing of the gateway, by Chester Price, well-known American etcher, appears on the frontispiece of this number. The Memorial is constructed of Indiana limestone and is composed of a monolithic pylon in the center, bearing the inscription "This gateway commemorates the entrance of women into college education." On the inside, toward the theater, are the names of the four women who matriculated in 1837. On each side of the central shaft are semicircular seats bearing the dates in Roman letters, 1837 and 1937.

The Memorial was designed by Richard Kimball of the firm of Kimball and Husted, New York, and was given by R. T. Miller, Jr., of Chicago.

JOURNAL

of the

AMERICAN ASSOCIATION
of COLLEGIATE REGISTRARS

INDEX

of Proceedings of the Association from 1910 to 1925.
Bulletin of the Association, Volume 1 to Volume 12.

By WILBUR KEELING

Acknowledgment is given the following persons who contributed to the organization of this index: Roy W. Bixler, H. C. Dorcas, Millard E. Gladfelter, A. E. Kent, W. C. Smyser, and R. O. Wilson.

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NOTE.—The following index contains three kinds of references: those referring to the Proceedings (1910-1925), those referring to the Re-edited Proceedings (1910-1917), and those referring to the Bulletin of the Association (1925-1937). References are interpreted as follows:

1917, 35—page 35 of the 1917 Proceedings.

1916, 58; (*ReEd,* 188)—page 58 of the 1916 Proceedings and page 188 of the Re-edited Proceedings.

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